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ABSTRACT

This book is designed to provide a quick introduction to LinkWay (one of a new generation of hypermedia programs) for teachers who are familiar with other computer applications, but who may not have worked with hypermedia applications. The book serves as a tutorial that quickly introduces the basic elements of LinkWay, thereby making more extensive or detailed sources, such as the documentation that comes with the program, comprehensible. The book contains the following five chapters: (1) "Electronic Pages" covers starting the program, creating new folders, creating new pages, copying a page, and using predrawn clipart; (2) "LinkWay Buttons" includes opening a folder, creating an invisible button, editing your button, hypertext, and using a link button; (3) "LinkWay Fields" contains information on creating fields, entering text in fields, and pop-up text fields; (4) "Using Base Pages" covers topics such as creating base pages, LinkWay database, and using the address book; and (5) "LinkWay Folders" includes topics on the story line, design elements, the order of pages, and instructional strategies. The appendix describes LinkWay tools, including the text editor, font/icon editor, and LinkWay Capture. (TMK)

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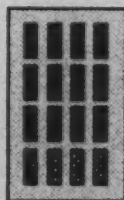
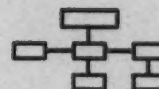
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LinkWay for Educators

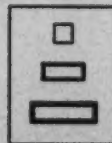
An Introduction

Object Type
Button
Picture
Field
List
Media



Line
Box
Bar
Shad Box
Cube
Circle
Fan
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Text

HELP



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Sharon Yoder, Glen L. Bull, and Judi Harris

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Judi Harris

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***LinkWay* for Educators**

An Introduction

Glenn Bull, Judi Harris, and Sharon Yoder

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We also wish to thank IBM Corporation for the loan of the equipment and software necessary to produce this book. In particular, we wish to thank Tom Greaves of IBM. Without his encouragement and support, this project would never have happened.

Conventions Used in This Book

In most cases, the terminology used in *LinkWay for Educators* follows that used in the documentation accompanying the *LinkWay* program.

References to specific *LinkWay* menu names and menu options appear in **boldface** type. References to specific *LinkWay* folders, pages, tools, windows, boxes, buttons, and icons are Capitalized.

Material such as troubleshooting tips, technical notes, shortcuts, and important words or phrases appears in *italic* type.

Most of the activities in this book work in exactly the same way whether you are using *LinkWay* or *LinkWay Live!* Thus, whenever the name "*LinkWay*" is used, it refers to either *LinkWay* or *LinkWay Live!*

Introduction

LinkWay is one of a new generation of hypermedia programs. These programs were made popular by the introduction of *HyperCard* for the Macintosh. *HyperCard* was not the first hypermedia program, but it was the first widely used one. *HyperCard* has influenced the development of many other programs, such as *ToolBook* for Windows environments, *HyperStudio* for the Apple II, and *SuperCard* for the Macintosh.

LinkWay, as a representative of this new genre of software, is difficult to classify. It has characteristics of a database, a word processor, a paint program, and a programming language. In *LinkWay*, the author can write programs in a built-in scripting language. However, it is not necessary to understand how to script in *LinkWay* in order to take advantage of *LinkWay*. With *LinkWay*, tasks that were previously difficult to implement on a computer are now much easier.

LinkWay for Educators is designed to provide a quick introduction to *LinkWay* for teachers who are familiar with other computer applications but who may not have worked with hypermedia applications. The documentation that comes with *LinkWay* provides a comprehensive overview of the software. Our intent is to provide a tutorial that quickly introduces the basic elements of *LinkWay*, thereby making more extensive or detailed sources comprehensible.

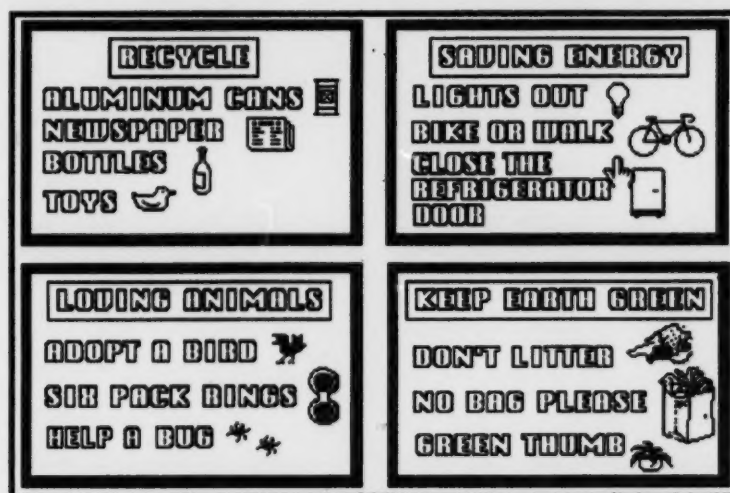
LinkWay for Educators is intended for teachers who have not previously used *LinkWay*, and who may not have used an MS-DOS computer with a mouse and pull-down menus. Some familiarity with basic computer skills (such as insertion of disks) is assumed.

LinkWay in the Classroom

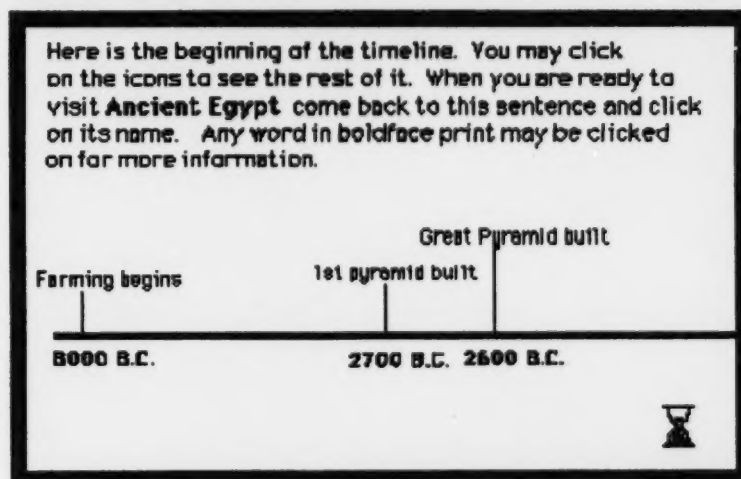
LinkWay is a software construction toolkit. The metaphor used for *LinkWay* is a folder containing a number of pages that can be linked together. This format is well suited to development of interactive stories. Each page in a *LinkWay* folder can contain a page of the story, illustrated with graphics. An entire class can participate in developing the story, with real pages placed on a bulletin board. Push pins and strands of yarn can be used to indicate branching points in the story and links from one page to another.

LinkWay is also well suited to development of many other types of class projects. One elementary teacher used a hypermedia tool to develop a unit on ecology titled *Think Green: How Kids Can Save the Planet*. Each student in the class identified one way to conserve energy or save the

environment. Each idea became a "page" in a "folder." The teacher then created a title page with a table of contents linked to all the other ideas.



LinkWay can be used in foreign language classes to create stories that are translated from English to Spanish (or some other language) with the click of a button. A dinosaur database is easily created for the lower grades, while chemistry teachers have used *LinkWay* to create folders about the periodic table. Information about each element is placed on a separate page, and the pages are then combined into an integrated folder. In the middle grades, one teacher created a hypermedia timeline with her class for a unit on Egyptian history. Information about each period of Egyptian history was placed on a separate page. A title page displaying the timeline was then linked to each of these periods.



The hypertext capabilities of *LinkWay* enable the teacher to create applications that allow a student to click on a key word in the text and instantly receive information from a glossary. *LinkWay* also lends itself to hypermedia applications involving audio and video as well as computer text and graphics. With the introduction of *LinkWay Live!*, connections to audio, video, and sound are even easier.

Some classes have developed electronic field trips by digitizing pictures from the area in which they live and incorporating them into *LinkWay* folders. These electronic field trips are then exchanged with students from other areas, often by sending computer disks through the mail. *LinkWay* is also an ideal user interface for control of a videodisc player. A videodisc can contain more than 50,000 slides or up to half an hour of video. Videodiscs developed for education can be used with accompanying *LinkWay* folders to examine thousands of paintings from the National Gallery of Art and other museums and thousands of images of plants and animals for biology classes.

Teachers using *LinkWay* can develop their own applications with their classes, use public domain educational folders developed by others, or purchase commercial *LinkWay* applications. In all these cases, an understanding of *LinkWay* can be useful for modifying and customizing *LinkWay* folders to meet individual needs.

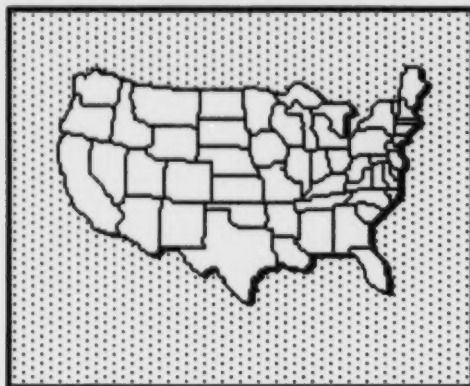
Getting Started

LinkWay requires DOS 2.1 or higher, a mouse and associated mouse software driver, and approximately 1.5 megabytes of free disk space. While *LinkWay* can be run from floppy disks, projects of any complexity will certainly require a good bit of disk swapping. For this reason we strongly recommend that, if at all possible, you learn to use *LinkWay* on a computer with a hard disk. If it is necessary to run *LinkWay* without a hard disk, consult your *LinkWay* manual for details.

The activities in *LinkWay for Educators* assume that *LinkWay* has been installed correctly. You should be sure that your *LinkWay Live!* directory includes the subdirectories LLHOME, LLTUTOR, and LLWORK. (If you are using *LinkWay* rather than *LinkWay Live!*, the subdirectories are called LINKWAY, LWTUTOR, and LWWORK.) If you do not have these directories, you may wish to reinstall *LinkWay*. See your *LinkWay Live!* or *LinkWay* manual for installation instructions. You may also want to make use of some of the material in the Tutorial folder for the activities presented in *LinkWay for Educators*.

Chapter 1. Electronic Pages

LinkWay is based on the metaphor of electronic pages that are displayed on the computer screen. These pages are grouped into folders. The pages can be linked together in a variety of ways. For example, one page might contain a picture of the United States.



Placing the cursor on a state and clicking the mouse button could then take the user to a second page with a more detailed drawing of the state. In a book, the user typically reads the pages in order. In *LinkWay*, it is possible to create links that connect a particular page to any other page in the folder.

LinkWay combines elements of many other kinds of programs. It incorporates the capabilities of text processing, paint and graphics programs, and databases; includes a programming language; and provides interfaces to control videodisc players, scanners, video digitizers, and audio digitizers.

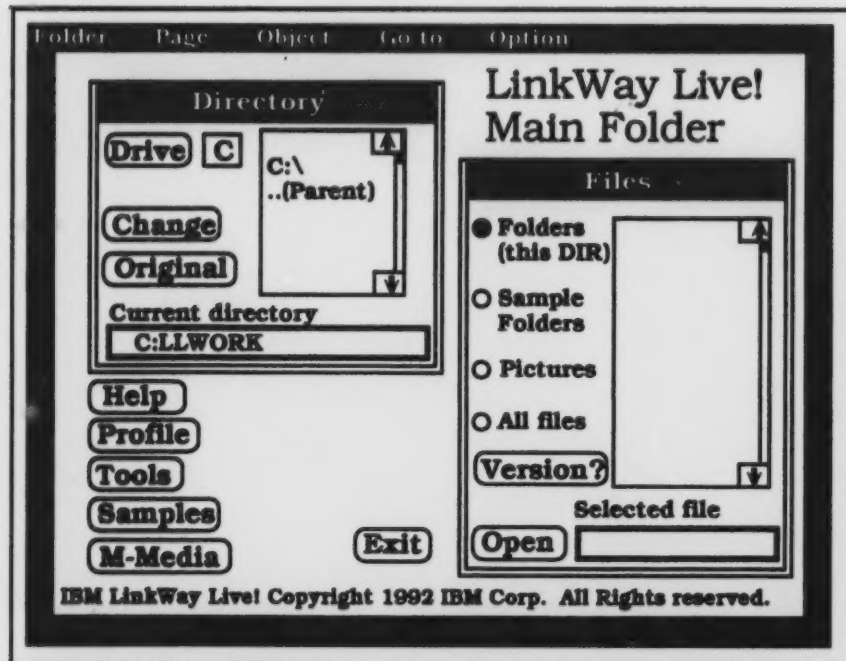
The term *hypermedia* is sometimes used to describe the capability to go from any location to any other location using a variety of media. Hypermedia applications take advantage of the medium of computing to combine technologies in new ways. For example, a program developed with *LinkWay* might present the pages of an anatomical text on the screen of the computer. If a medical student selects an unfamiliar term, such as *corpus callosum*, a videodisc player controlled by the computer could present a picture of that anatomical structure.

Starting the Program

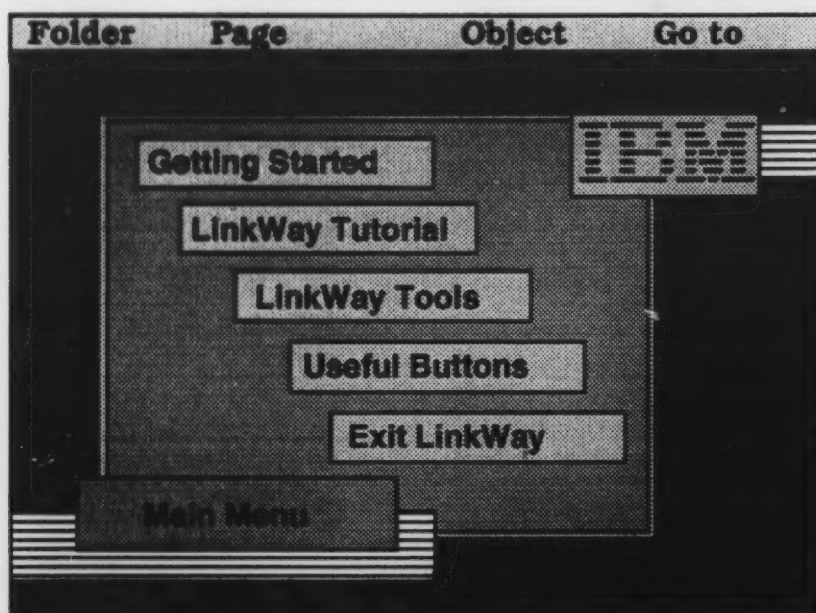
Start your computer as you usually do. Then, to start *LinkWay Live!*, type

llgo

and you see



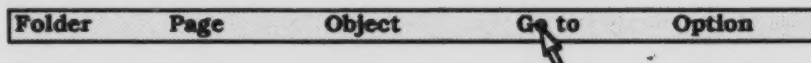
If you are using *LinkWay*, type
lwgo
and you see



LinkWay is based on the metaphor of a series of pages stored in a folder. When you first run *LinkWay*, you see a menu.

After you have completed the introduction to *LinkWay* in this first chapter, you may want to look at the sample folders, tutorials, tools, and sample buttons. You can then return to this menu by restarting *LinkWay*. You can also go to the **Folder** menu from anywhere in *LinkWay* and then from the Open Folder window select the folder Main from the list of folders that appears.

Before you begin work with *LinkWay*, it is a good idea to check the mode setting. Use the mouse to point to **Option** on the menu bar at the top of the screen.

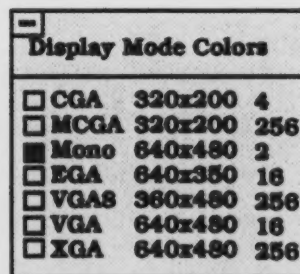


Click either mouse button. A menu drops down. Move mouse pointer to Set Mode.



You can remove any menu from the screen by clicking outside of the menu box that appears on the screen.

Click either mouse button. You then see a window something like this.



Select the display format appropriate to your computer by clicking in one of the boxes.

See the documentation that comes with the LinkWay software for more information on color monitors.

The small “-” in the upper left corner is called the “Close Dot.” Put the mouse pointer on the Close Dot () and click. The window disappears and the new settings are in effect.

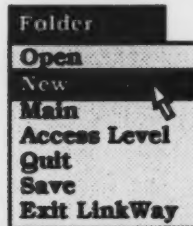
In LinkWay, clicking on the Close Dot will always cause the window to disappear. However, sometimes pressing the Enter key will also cause the window to disappear. You can also remove any window from the screen by clicking outside of that window. Even though there are often several ways to remove a window, this book will always tell you to use the Close Dot. However, you can use any method you wish to close windows.

The information on which of these choices of display modes works with each model of computer is given in your *LinkWay* manual. Since *LinkWay for Educators* is printed in black and white, screens will be resemble screens in which the computer is set in Mono display mode.

Note that a folder created in one graphics format may only be opened in that same display mode. See your LinkWay manual for more details.

Creating a New Folder

Next, point to the **Folder** option of the Menu bar at the top of the screen and click either mouse button. A menu of various folder options appears. Move the mouse pointer downward until the **New** option is highlighted.



Click the mouse button with **New** highlighted. A box asking for the name of the new Folder appears.

—
New Folder Name
()

Type DEMO

—
New Folder Name
(DEMO)

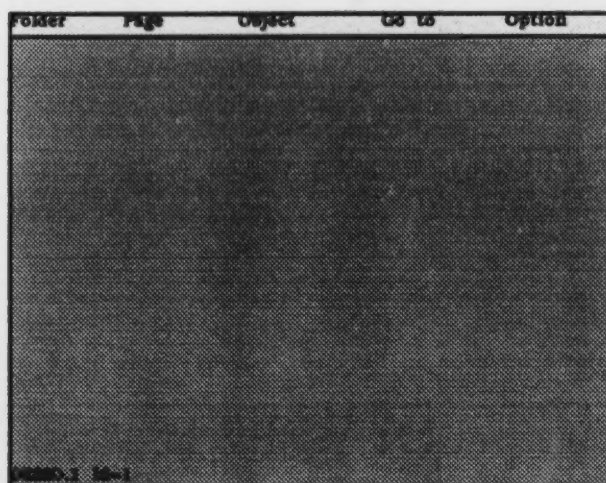
Press the Enter key or close the window by clicking on the Close Dot. Your first folder is automatically saved in a directory called LWWORK.

If you are using *LinkWay Live!*, you see

DEMO.1 Id=1

in the lower left corner of the screen. If you are using *LinkWay*, you see

DEMO.BASE

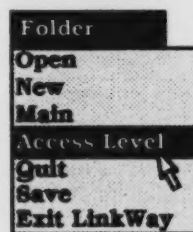


If the computer you are using is your personal microcomputer, all is well. However, if you are using a public microcomputer, you will want to take your work with you when you are finished. To do this, you will need to transfer your folder to a floppy disk at the end of each session. See the end of this chapter for instructions on how to transfer your folder.

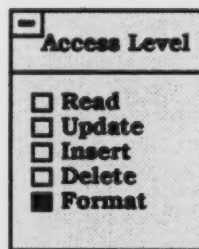
Setting the Access Level in *LinkWay*

LinkWay allows folders to be "protected" in a variety of ways. You can create folders that can be protected so students cannot accidentally modify them when they are using them. The level of protection of a folder is called its "access level." You set the access level from the **Folder** choice on the menu bar.

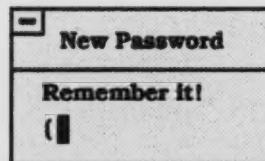
Point to **Folder** on the menu bar and click your mouse. Move the mouse pointer to **Access Level**.



Click either mouse button. You see a window like this.



If Format is not checked, click on the word "Format." Click on the Close Dot. If you changed the access level, you then see

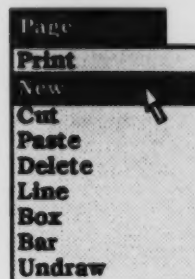


At this point, you do not need a password, so point to the Close Dot and click your mouse button to close this window. Later, when you are doing more advanced work with *LinkWay*, you may want to use passwords to access folders.

Setting the access level of your folder to Format means that you can modify the pages in any way you wish. However, when you are working at this level, you must double click (click twice) on objects to make them work correctly. When you are finished with your folder, you will reset the access level to a lower setting, and a single click will activate buttons and other objects. This will be discussed in more detail later in this book.

Creating a New Page

One of the advantages of electronic pages is that you can create as many as you want without destroying any trees! Make a new page now. Point to **Page** on the menu bar and click the mouse button. Move the mouse pointer to the New option and click the mouse to select it.

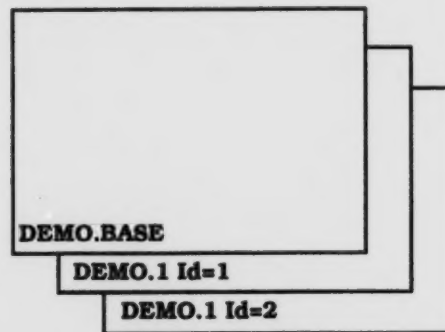


A new blank page should appear. Look carefully at the lower left corner of the page.

If you are using *LinkWay Live!*, you see

DEMO.2 Id=2

in the lower left corner of the screen. When you create a new folder, *LinkWay Live!* creates two new pages: a page called the Base page and a page that is the first page in your folder. Base pages will be discussed later in this book. The page that appears on the screen is the first page of your folder. When you create another new page, it is automatically inserted after your current page.



If you are using *LinkWay* and create a new page, you see

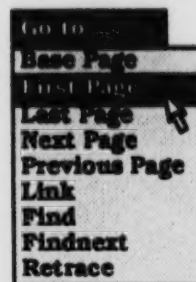
DEMO.1 Id=1

in the lower left corner of the screen. When you create a new folder in *LinkWay*, it creates only a "Base page." The first new page is "after" the Base page. You will need to create a second new page so that you see

DEMO.2 Id=2

You now have three pages in your folder: a Base page and two blank pages.

If you want to go back to the first page in your folder, you can point to **Go to** on the menu bar and click the mouse button. Then select **First Page** and click your mouse button.



You see the first page of your folder.

Practice using the **Go to** menu to move between the first and last (second) pages in your folder. **First Page** takes you to the first page in your folder. **Last Page** goes to the end of your folder. In the case of the folder DEMO, the last page is labeled as DEMO.2 Id=2.

What happens if you start on the last page of your folder (DEMO.2) and select **Next Page**? Do you see that you can go "around in circles?" Choosing **Next Page** repeatedly moves you from the first page to the second page to the first page to the second page and so forth. Does the same thing happen if you repeatedly choose **Previous Page**?

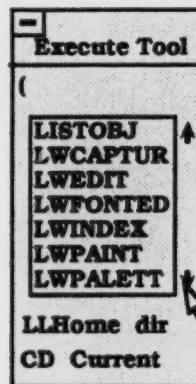
In your exploration, you probably did not see the Base page. The only way to get to the Base page is by selecting **Base Page** from the **Go to** menu. Be sure you are comfortable navigating through your folder pages before you continue your work in this chapter. You will learn about using Base pages in Chapter 4 of this book.

LinkWay Paint

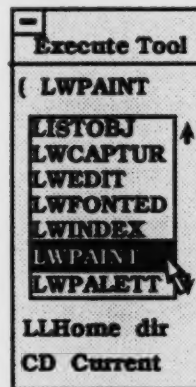
Next, select the **Object** menu at the top of the screen by clicking your mouse button over the word "Object." At the bottom of this menu is **Tools**.



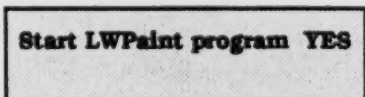
Select **Tools** by highlighting it and clicking your mouse button. You see a menu something like this.



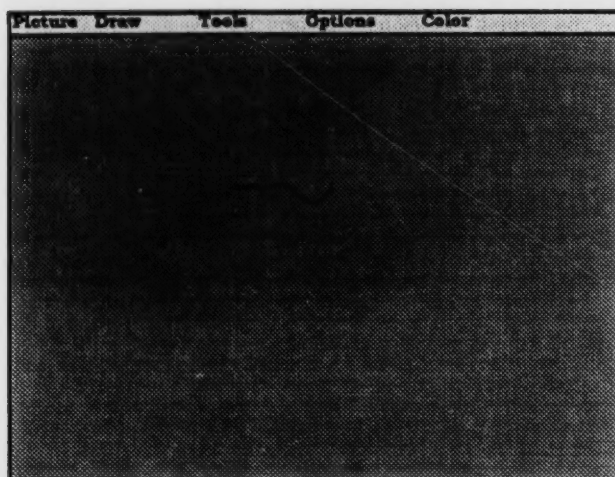
Click on the small arrows to the right of the list until you see LWPAINT. You may need to click several times. Click on LWPAINT. You see LWPAINT appear in the parentheses above the list.



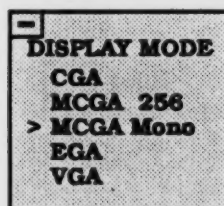
Now click on the Close Dot. Next you see



Place the mouse pointer on the line containing YES. The entire line is then highlighted. When you click the mouse button, the screen changes, and you see a new menu bar. You are now in the *LinkWay Paint* program.



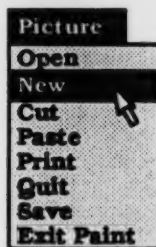
First, set the mode for *LinkWay Paint* by clicking on **Options** and selecting **Set Mode**. You see a window something like this.



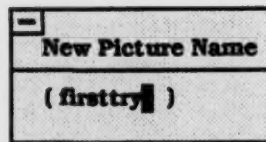
Select the *same* mode-category that you used for your *LinkWay* setting earlier. Click on the Close Dot.

The menus and the windows in LinkWay Paint can also be removed by clicking outside the box on the screen.

Now, click on **Picture** on the menu bar. Then select **New**.

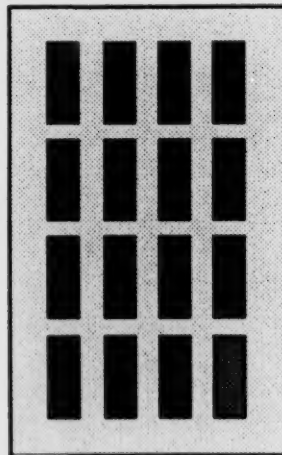


To give your picture a name, move the mouse pointer to the parentheses below **New Picture Name**. Click the mouse button. Type the name you want to use, perhaps "firsttry."



Here you can click mouse button or press the Enter key to close the New Picture Name window. Now you are ready to draw.

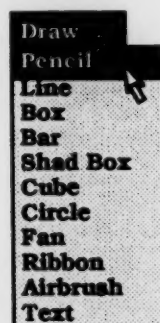
Next, select a color by clicking on **Color** on the menu bar. If you are in monochrome mode, you see a very simple menu allowing you to choose only black or white. If you are using a color mode, you will see a more complex menu such as this.



Recall that this book is printed in black and white, so the screen shots resemble those on a monochrome monitor. If you have a color screen, the menus like the one above appear in color.

Using your mouse, point to the color you want. Click on it to select it and close the color window. Be sure to select a color that is different from the background of your screen.

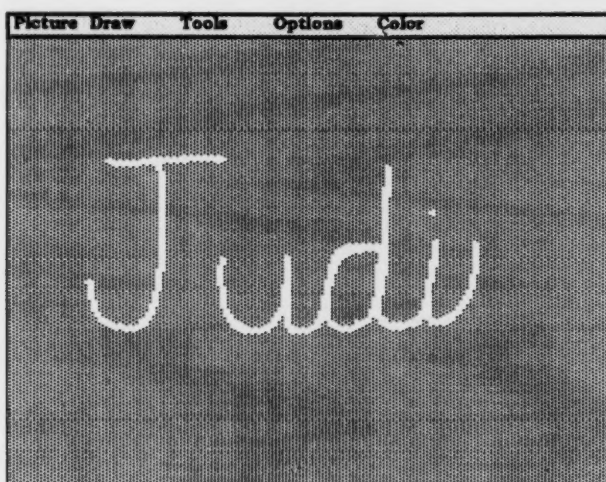
Now, from the **Draw** menu, select **Pencil**.



Click the mouse button at the point where you want to begin to draw. The pointer changes to a "+." Hold down the mouse button as you move the mouse. By moving the mouse pointer across the screen, you can draw with the Pencil just as you might with an actual pencil. When you want to stop drawing, release the mouse button.

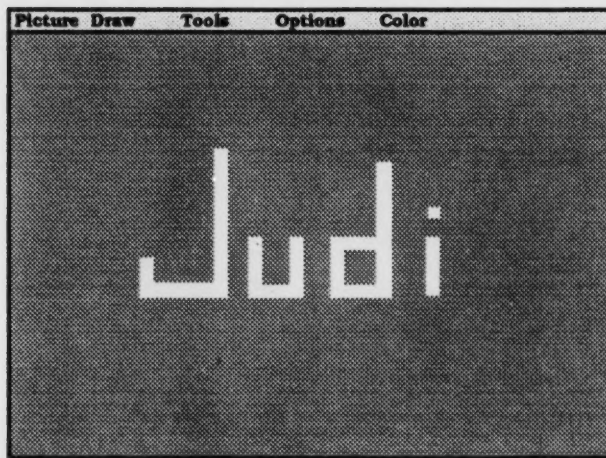
If drawing with the mouse is new to you, don't become discouraged. Coordinating the movements of your hand on the mouse and the pointer on the screen gets easier with practice. Don't worry if your initial attempts are not as neat as you would like. Relax and enjoy the experience and you will get better.

You might try writing or printing your name with the pencil.

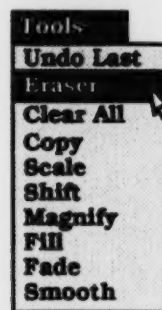


Remember, you can release the mouse button to stop drawing a line. Then click again at another point to start drawing again.

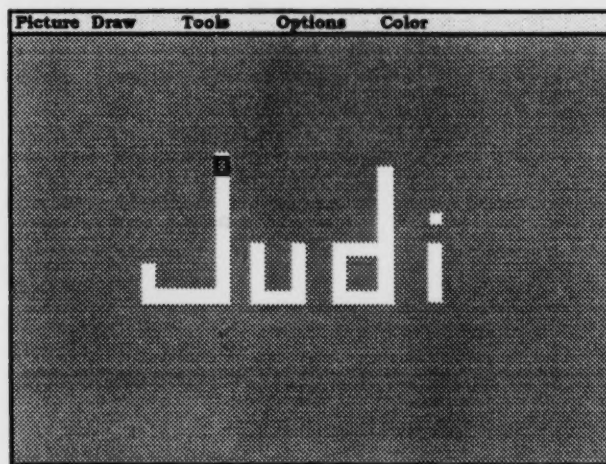
You might like to try making block letters by selecting the **Box** or the **Bar** choice from the **Draw** menu. A small box-pointer appears. The first click starts the box or bar. Then move the mouse and click again when you are satisfied with the size and shape of the box or bar.



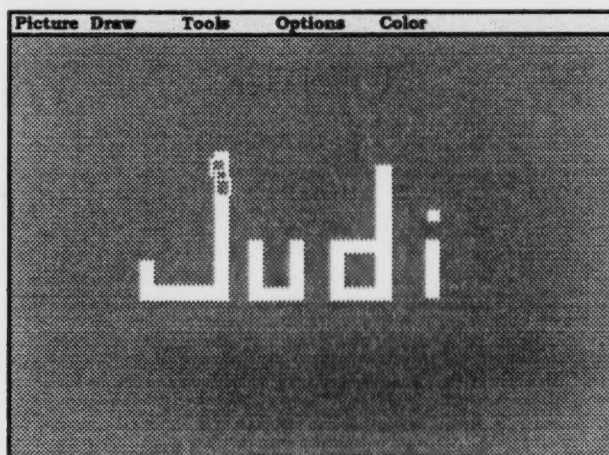
If you want to correct small errors in your work, you can select **Eraser** under **Tools**.



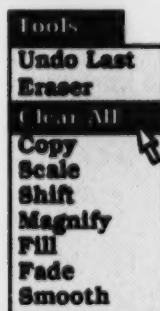
A small square appears. Place the box where you want to erase. Click the mouse button. The dots under the eraser square disappear.



You can also erase in much the same way that you would with a real eraser. Click the mouse button and hold it down. Then move the mouse over the area you want to erase. (The phrase "click and drag" is used to describe the process of holding down a mouse button and moving the mouse.) When you are finished erasing, release the mouse button.

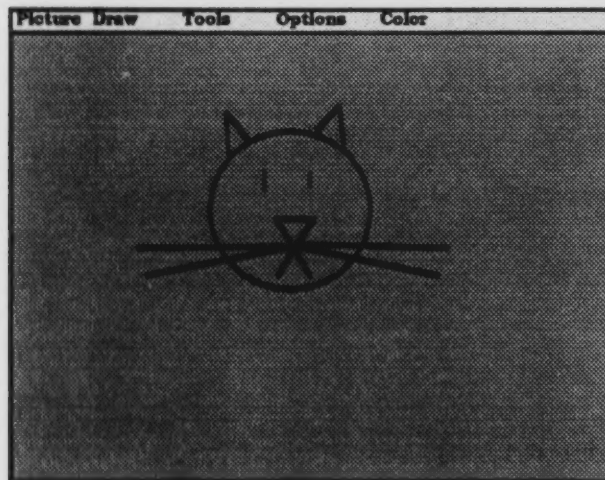


If you want to clear the screen completely to begin drawing again, you can select **Clear All** from the **Tools** menu.



When you select **Clear All**, everything on the screen below the menu bar is gone. Unless you have saved it previously, there is no way to get your work back. Use **Clear All** with care.

When you feel comfortable using the mouse to paint and draw, you are ready to begin a picture for your first folder. Clear your page by choosing **Clear All** from the **Tools** menu, or create a new picture by selecting **New** from the **Picture** menu. We will sketch a cat's face. The exact shape of the cat's face is not important. Our cat looked like this:



You need not worry about the precision of the sketch; the basic shape is all that is necessary.

To create the face of the cat, select **Circle** from the **Draw** menu. Click where you want the center of the cat face. Hold down the Shift key while you move the mouse. Click again when the circle is the size you like.

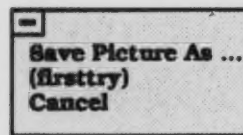
To create a line that produces the cat's whiskers, select **Line** from the **Draw** menu. Click the mouse button where you want the whisker to begin. Move your mouse to where you want the whisker to end, and click again. Use **Line**, **Pencil**, **Bar**, or **Box** to draw the cat's eyes. Use **Line** or **Pencil** to draw the nose, mouth, and ears.

Another way to correct errors in a drawing is to use **Undo Last** from the **Tools** menu. **Undo Last** removes the additions made to your drawing with the current tool from the **Draw** menu. For example, if you made both the mouth and the nose with the **Pencil** and decide you don't like them, you can select **Undo Last**. Since the **Pencil** is your current choice, the mouth and nose disappear. Remember, **Undo Last** works only if you have not selected another drawing tool.

As you create your cat, you may wish to experiment with other choices from the **Draw** menu. For example, you might use **Fan** to create lots of whiskers or **Airbrush** to create a spotted cat.

Putting a Picture on a Page

When you are satisfied with your cat picture, select **Exit Paint** from the **Picture** menu. This menu selection will require you to save your picture. You can use your original name or type a new one. The name you select for your picture will be the name that appears on your disk.



Click on the Close Dot to use the name that is shown in the window, or click Cancel if you do not want to leave *LinkWay Paint*.

If you want to leave LinkWay Paint without saving your picture, you can select Quit from the Picture menu and then select Exit LinkWay Paint.

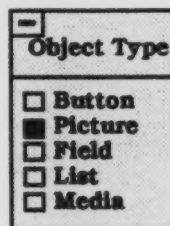
When you leave *LinkWay Paint*, you are automatically returned to the *LinkWay* folder you were working on when you selected *LinkWay Paint*. Make sure you are on first page in your folder. You should see

DEMO.1 Id=1

in the lower left corner of your page. (Use the Go to menu if you need to locate your first page.) Select Object from the menu bar and click on New.

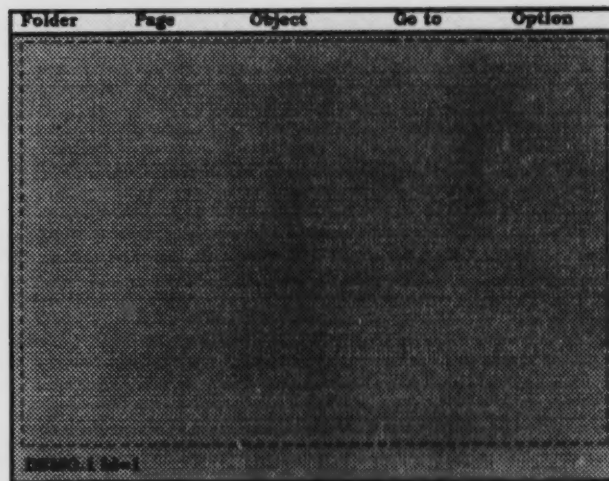


Next, select Picture by clicking on Picture in the window.



Note that if you are using LinkWay, you will not have the choices of List or Media in this window.

When you click on the Close Dot in the Object Type window, a small rectangle appears. Place the rectangle near the upper left corner of your screen. Click the mouse. Next, move the mouse to the lower right of your screen. Be sure the dotted line at the bottom is above the name and Id that appear on the lower left corner of your page.



Now click again. You see

	Picture Name
()	

Click in the parentheses and type the name you would like your picture to have *in this folder* and press Enter. Then click on the Close Dot.

	Picture Name
(catface)	

A list of picture files appears.

	Picture File						
(FIRSTTRY							
<table border="1"> <tr> <td>FIRSTTRY</td> <td></td> </tr> <tr> <td colspan="2"></td> </tr> <tr> <td></td> <td></td> </tr> </table>		FIRSTTRY					
FIRSTTRY							
Current dir							
CD Pict dir							

Choose the name of your picture you just saved and click on the Close Dot. Your picture appears on the page.

The name you typed in the Picture Name window is the name that will be used for the picture object in your folder. The name you selected from the Picture File window is the name used when you were in LinkWay Paint to store the picture on the disk. Using this ability to have both a disk file name and a folder name for a picture, you can, for example, name all of the pictures for a particular folder with similar names: myfolder1, myfolder2, etc. Then the names of the pictures within the folder could have more meaningful names like house, cat, face, etc.

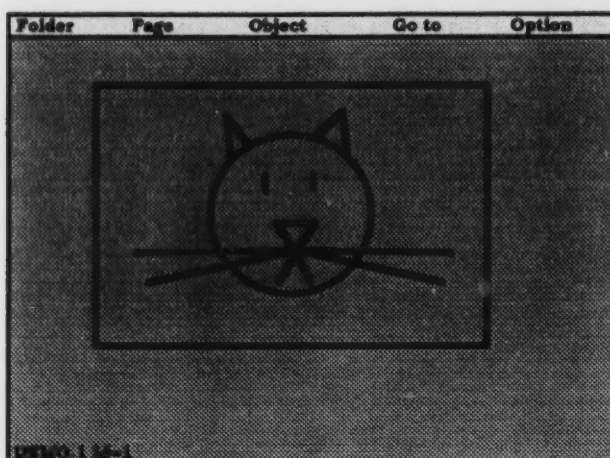
You next see the Adjust menu. If your picture appears to be placed on the page the way you want it, click on Fullpic.

ADJUST	
Up	1
Down	1
Left	1
Right	1
Up	8
Down	8
Left	8
Right	8
FullPic	

If you want to move the picture, use the Up, Down, Left, and Right choices on the Adjust menu. The choices with a number "1" after them move the picture a small distance. The choices with a number "8" after them move the picture a larger distance.

When you are satisfied with the placement of your picture, click anywhere outside of the Adjust menu.

Next, put a border around your cat face. Choose **Box** from the **Page** menu. Click above and to the left of the cat face. Move the mouse to the right and down. Click again when you are satisfied with the placement of your border.

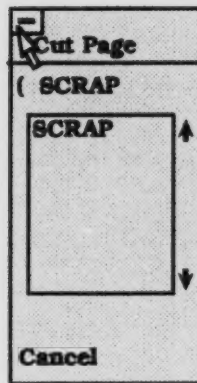


If you decide that you do not like your picture, you can delete it from your page. First click on the picture. Be sure that the information in the lower right corner of the page tells you that you have the correct picture. Notice that the name in the lower right corner is the name of the picture *in the folder*. It is *not* the name you used to store the picture on disk. To remove the picture, select **Delete** from the **Object** menu. The picture is then gone from your folder. However, the border around the picture is still there because it was added using **Box** from the **Page** menu.

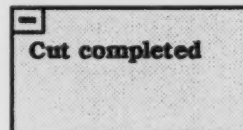
If you want to remove the border, you can select **Undraw** on the **Page** menu. If you have used several drawing tools from the **Page** menu, you will need to select **Undraw** several times.

Copying a Page

Next we will use *LinkWay* to turn our cat into a Cheshire Cat. The Cheshire Cat, you may remember, was the cat in *Alice in Wonderland* that faded away until only its smile was left. To create this cat, first make a copy of the page containing the cat picture (DEMO.1). To do this, select **Cut** from the **Page** menu. You see the Cut Page window. If you click on **SCRAP**, you see



Click on the Close Dot to store the page in the file SCRAP. (You can use another file name if you wish. The file SCRAP is automatically created for you.) You then see the Cut Completed window.



A copy of your page is now stored in the file SCRAP.

Be sure that you see the Cut Completed window. To put a page—or an object—into the SCRAP file, you must be sure that SCRAP appears at the top of the file list before you click on the Close Dot.

Next select **Paste** from the **Page** menu. You see the Paste Page window. Click on SCRAP if it is not already in the parentheses. Click on the Close Dot. You have created a copy of the page. Your screen looks nearly the same. Look carefully at the bottom left corner of the screen. You should see something like

DEMO.2 Id=3

Next, select **First Page** from the **Go to** menu. In the lower left corner you see

DEMO.1 Id=1

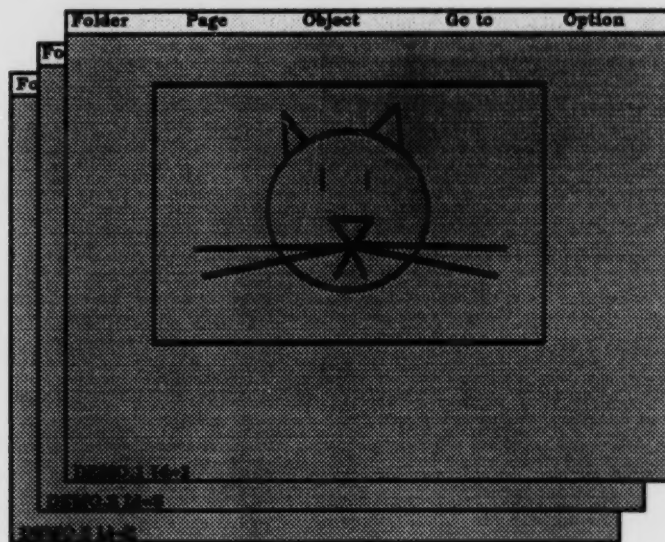
Then select **Last Page** from the **Go to** menu. Now you see

DEMO.3 Id=2

in the lower left corner of a blank page, which you created earlier in this chapter.

Note that the pages are numbered in the order they appear in the folder (DEMO.1, DEMO.2, DEMO.3). However, the Id number reflects the order in which the pages were created. First you created a blank page (Id = 1). Then you created a new page (Id = 2). Then, after putting the cat face

on the first page, you pasted a copy of the first page. The copy was placed between the original two pages. This new page then has Id = 3.



Keep in mind that Paste always pastes a page after the current page, just as New always puts a page after the current page.

You now have a folder with three pages. The first two pages have identical cat faces on them. The third page is blank.

Changing the Picture

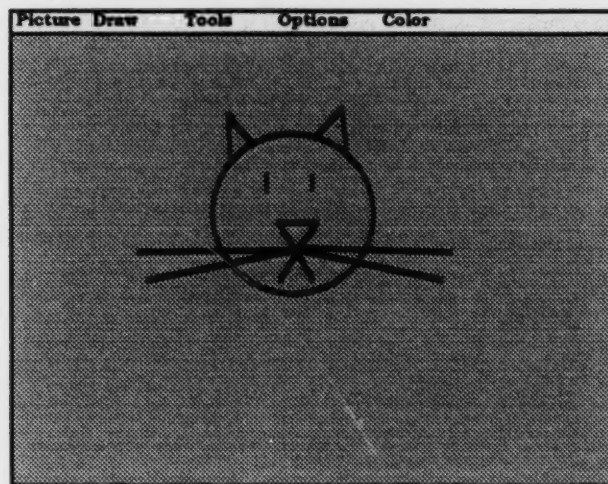
Now you want to change the second picture of the cat. Select **Next Page** from the **Go to** menu to get to the second page in your folder (DEMO.2 Id=3). Click on the cat picture. Notice that the name of the picture appears at the bottom right corner of the screen. Select **Delete** from the **Object** menu. When you click on **Yes**, the cat picture disappears, but the border you created with the **Box** command under **Page** stays in the same place.

You cannot make changes in the cat picture itself in *LinkWay*. You must use *LinkWay Paint*. Select **Tools** from the **Object** menu and choose *LinkWay Paint* from the *Execute Paint* window.

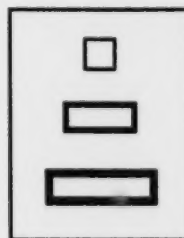
Get your cat picture on screen by selecting **Open** from the **Picture** menu and then selecting your picture by name.



Select **Eraser** from the **Tools** menu. Click and drag (hold the mouse button down while you move the mouse) to erase the outline of the cat's face.



If you would like a larger eraser, select **Set Width** from the **Options** menu. You see



Then select **Eraser** again. You will have a larger eraser to work with.

The Set Width option affects many of the drawing tools. You may want to set it back to the smallest setting when you finish erasing.

When you are satisfied with your revised cat picture, select **Save** from the **Picture** menu. Give your revised picture a new name, perhaps "partcat." Exit *LinkWay Paint* by selecting **Exit Paint** from the **Picture** menu.

Now you are ready to put your revised picture on the second page of your folder. Be sure you see

DEMO.2 Id=3

in the lower left corner of your page. Now select **New** from the **Object** menu. Place the picture in exactly the same way that you placed the first picture on the first page of the folder. Give your picture a different name, perhaps "cat2." Then pick "partcat" from the **Picture File** window.

You now have two "cat" pages in your folder of electronic pages—the first page with the complete cat and a second page in which the cat has begun to disappear. Use the **Go to** menu to flip between the complete cat and the cat that is disappearing. If you like, you can use the third page of the folder to add another cat page. Use *LinkWay Paint* to remove additional features of the cat and place the picture on the third page. If you wish, use **New** from the **Page** menu to make more pages of cat faces. As you flip from page to page, the cat will appear to gradually fade away until only its smile remains.

Prior to animated films, simple forms of animation were created by arranging successive images on cards or pages of a book. Flip books may still be found in toy stores and Cracker Jacks boxes today. An electronic flip book is a good beginning *LinkWay* project.

Using Predrawn Clip Art

Those with limited artistic talent need not despair. A wealth of predrawn illustrations, often called "clip art," is available for *LinkWay*. Much of this art is available as shareware or sold in the form of commercial libraries. There are a few pictures included with your *LinkWay* tutorial to give you an idea of the possibilities.

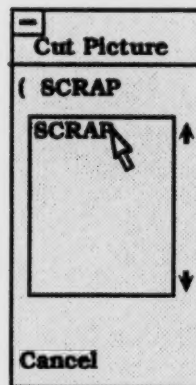
You can most easily access sample clip art by going to *LinkWay Paint* by selecting **Tools** from the **Object** menu. Once you are in *LinkWay Paint*, select **Open** from the **Picture** menu. Choose a predrawn picture from the list provided. Take a few minutes to see what pictures you have available to you.

Most likely you will find a file name or two among the list of pictures that includes the word "CUTS." (It may be named something like VGACUTS or MCGACUTS.) This picture file contains a number of small pictures, called icons.

For the next activity, we will cut a right arrow from among these icons.

*If you do not have a picture containing an arrow, you can draw your own.
Use **Line** from the **Draw** menu. Save your picture using the name
ARROW.*

Begin by selecting **Open** from the **Picture** menu to get the picture containing the arrow you want to work with on the screen. Next, select **Cut** from the **Picture** menu. You can then store the portion of the picture in a "cut picture" file. You can use **SCRAP** for such temporary storage by clicking on **SCRAP**



or you can give the piece of the picture you cut a different name.

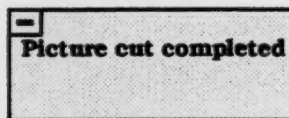
Next, a small box appears. Click above and to the left of the area of the screen you want to cut.



Move the mouse to the right and down so that the rectangle surrounds the area you chose.



Click the mouse again. You see



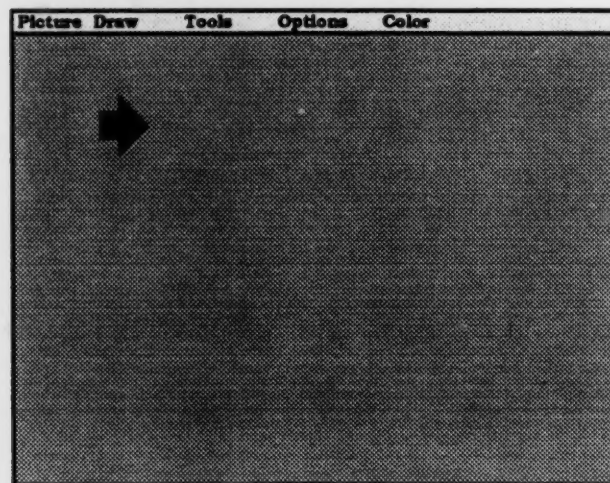
Click on the Close Dot.

If you don't think you cut the entire arrow, or you are not happy with the area you selected, you can simply try again. The new area that you cut will replace the old one in the file SCRAP.

Next, select **New** from the **Picture** menu and name your picture **ARROW**.

*Note that you cannot create a new picture until the old one is saved. If you have modified your file of pictures and don't want to save the changes, select **Quit** from the **Picture** menu. Your picture is closed without saving any changes. You can then create a new picture.*

Once you have a new picture, select **Paste** from the **Picture** menu. A box appears that is the size of the area you cut from the previous picture. Place the box near the top left side of the page. Click the mouse.



Return to *LinkWay* by choosing **Exit Paint** from the **Picture** menu. If you have not saved your picture, you will be asked to save before you leave *LinkWay Paint*.

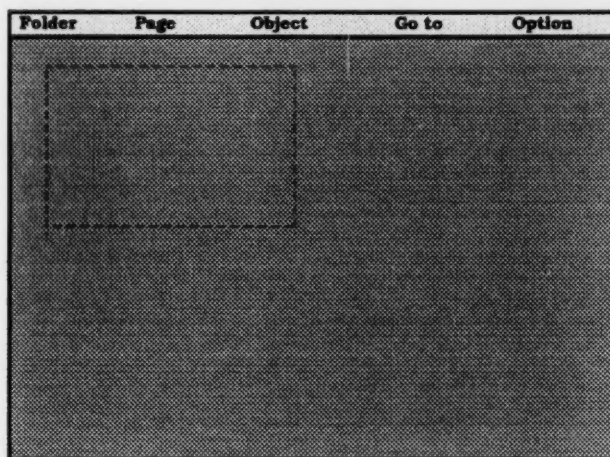
Putting a Clip Art Picture Into Your Folder

Once you are back in your own folder, go to the last page by selecting **Last Page** from the **Go to** menu. If the last page is not blank, insert a new page.

*Remember that to add a new page to your folder, you must go to the **Page** menu and select the **New** option.*

Once you have a fresh, blank page, you are ready put the arrow picture on it.

Choose **New** from the **Object** menu and check **Picture**. Draw a rectangle in the upper left corner of the page.



Give your picture a name, such as "arrow #1."

Next, select the name you used to save your picture in *LinkWay Paint* from the **Picture File** window. We used the name **ARROW** to save our picture. The arrow should appear on the upper left side of your page. Use the **Adjust** menu if you need to modify the placement of the picture. You will use this arrow picture in the next chapter in this book.

Saving Work

Before stopping, you will want to save your work. You can select the **Save** option from the **Folder** menu to save your work at any time. When you exit *LinkWay*, any changes you have made are automatically saved. The **Save** and **Exit LinkWay** options are found on the **Folder** menu.

*If you want to leave a folder without making changes, you can select **Quit** from the **Folder** menu.*

To make a copy of your work on a floppy disk:

- Be sure you are in **DOS**.
- Be sure you have a formatted floppy disk. (If you do not have a formatted disk, see your **DOS** reference manual for instructions on disk formatting.)

- Insert your disk in the A drive. Assuming that *LinkWay* is installed on your C drive, be sure you are at the C prompt. Then type

copy c:\LLWORK\yourfoldername.* a:

where "yourfoldername" is the name of the folder with which you have been working. You can use the same steps to create a backup copy of your work at anytime that you wish.

Troubleshooting Tip: When quitting LinkWay, the folder is automatically saved in the directory LLWORK. If you are using a public machine, it is important not to clutter up the hard disk with miscellaneous files. After you back up your files to a floppy disk, delete your folder from the hard drive.

Summary

In this chapter, you learned the following skills:

- How to create a new *LinkWay* folder
- How to use several of the *LinkWay Paint* tools
- How to move pictures from *LinkWay Paint* to *LinkWay*
- How to save your work and exit *LinkWay*.

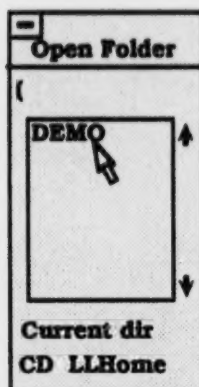
You also learned how to create a type of *LinkWay* animation by using the **Go to** menu to move from one page to another, as in the example of the disappearing Cheshire Cat. In the next chapter we will show you how to create *LinkWay* buttons that will take you more smoothly from one page to another.

Chapter 2. *LinkWay* Buttons

In the first chapter, we introduced *LinkWay Paint* to help create the individual pages that make up *LinkWay* folders. We demonstrated that graphics can be created and modified in *LinkWay Paint* and then moved to a folder. In this chapter, we will use the arrow you copied or created previously as we learn to use *LinkWay* buttons. Buttons are used to connect pages to each other.

Opening a Folder

Start *LinkWay* in the same way you did in the previous chapter. To retrieve the folder you created in the first chapter, go to the **Folder** menu and select the **Open** option. The Open Folder window will appear. In Chapter 1, we called our first folder DEMO, but you may have used a different name.



Click on the folder name and then click on the Close Dot to open the folder.

*Note: The method used to open the DEMO folder with the **Open** option on the **Folder** menu can also be used to open any other *LinkWay* folder.*

Copying the Page

After the folder is retrieved, use the **Go to** menu to go through the folder until you reach the page with the arrow.



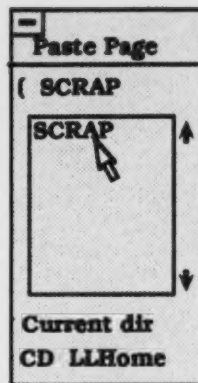
(If you do not have this page, use *LinkWay Paint* to sketch an arrow and move the picture onto a blank page in your folder.)

The page number—after DEMO—and the Id number of this page may be different. These numbers are determined by how many pages you created in the first chapter.

Begin by making a copy of the page with the arrow. To do this, go to the **Page** menu and select **Cut**. Recall that this step allows you to place the page in a temporary file.



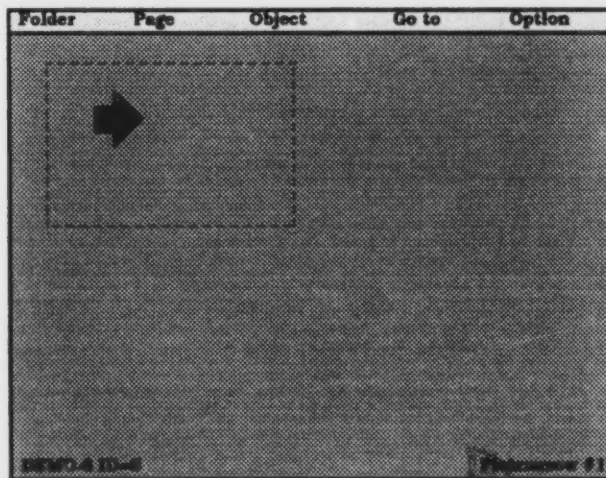
Click on the Close Dot to close the Cut Completed window. Next, select **Paste** from the **Page** menu.



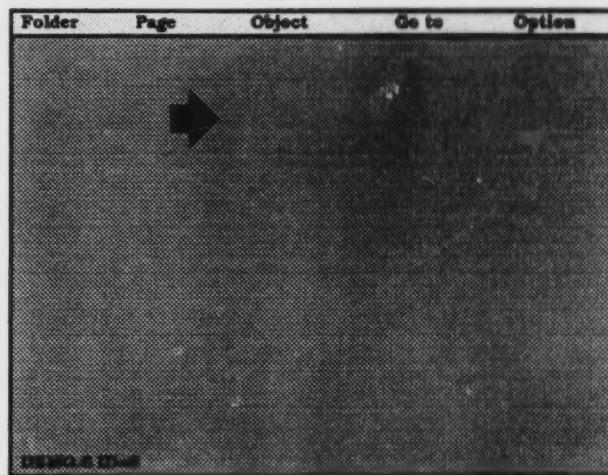
A copy of the page containing the arrow will be put in your folder *after* your current page. *LinkWay* takes you to the new page after it is pasted. Since the two pages are identical, it may not be obvious that a second page has been created. Check to be sure you have two pages with an arrow on them. They should have different page numbers and different Id numbers.

Changing the Copy

Now, let's change one of arrow pages. Go to the second page in your folder that has an arrow on it. Click on the picture of the arrow. You see the outline of the picture and the name of the picture at the bottom of the page.



Now select **Move** from the **Object** menu. A box that is the same size as your arrow picture appears. Move the mouse so that the box is to the right of the one containing the arrow and click the mouse button. The arrow picture appears in a new location.

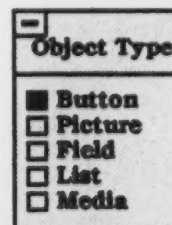


To demonstrate that this is so, choose **Previous Page** from the **Go to** menu. The arrow appears to move back to the left. The effect is somewhat like flipping backwards through a flip book. You can make the arrow appear to move forward by selecting **Next Page** from the **Go to** menu.

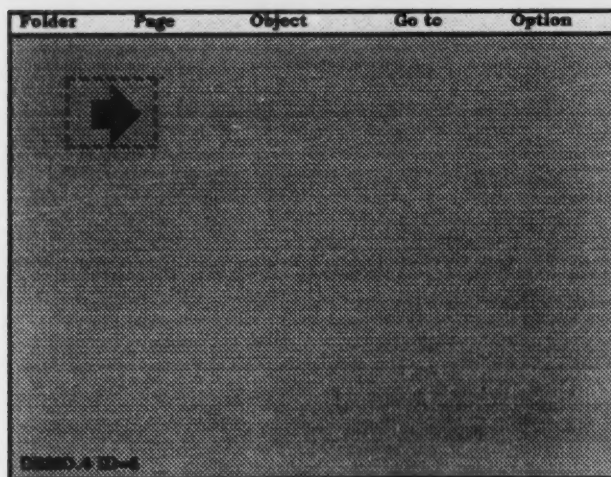
The speed of the "animation" depends on the speed of the computer you are using. If you are using a relatively slow machine, you will see the picture change, but the movement will be very slow.

Creating an Invisible Button

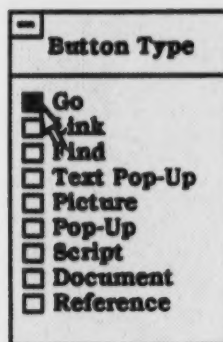
Now that you have generated the effect of movement manually by using the menus to flip between the two pages, the next step is to automate the process by creating a button that will switch between the two pages when it is pressed. Go to the page with the arrow closest to the left side of the page. Choose **New** from the **Object** menu and then select **Button**.



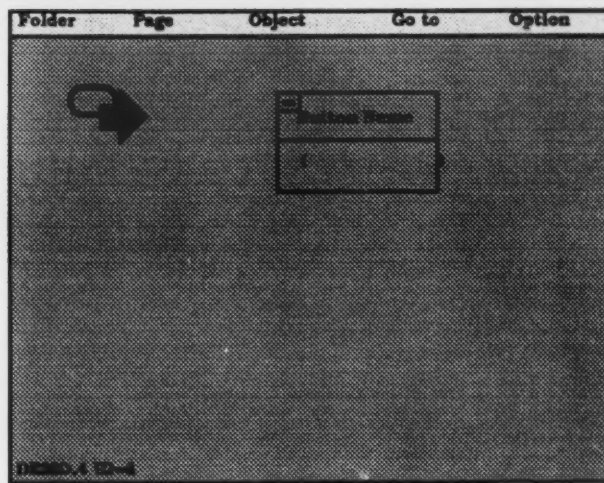
Click on the Close Dot. A small rectangle appears. Click at the upper left of the arrow picture. Move the mouse down and to the right until the arrow is covered by the rectangle and click the mouse again.



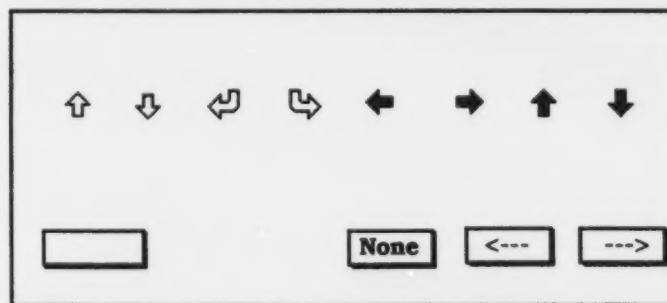
Next, a menu appears with a list of kinds of buttons.



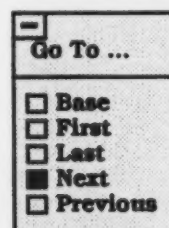
Select Go and then click on the Close Dot. Your button changes to a small oval and you see the Button Name window.



Name your button "OnArrow." Click on the Close Dot. You see a window that can be used to select an icon—small picture—for the button.



For this button, click on None. Then you see the Go To window. Select Next so that the button will automatically go to the next page.



When you click on the Close Dot in the Go To window, your screen appears unchanged. However, you have created an invisible button.

To see your button, click on the area over the arrow. A rectangle appears around the arrow. At the bottom right of your screen, you see

Go:<OnArrow>

LinkWay is telling you the name and kind of button that is over your arrow. Click outside of the rectangle to remove the name and the rectangular outline of the button.

If you decide you don't like your button, you can easily remove it. First, click on the button. Check the information in the lower right corner of your screen to be sure you have the correct button. Then choose **Delete** from the **Object** menu. The button is now gone from your page.

Note that the picture of the arrow and the invisible button are not connected. You can remove the button without affecting the picture. Similarly, you can change the picture without affecting the button.

Testing the Button

You should never assume that a button you create in *LinkWay* will work exactly as you planned. Testing is an important part of creating a *LinkWay* folder. To try out your new button, first move your arrow pointer over the button. It changes to a tiny pointing hand. Next, double click—click twice—anywhere on your button. Clicking activates the link that takes you to the next page. Since the same arrow appears on each page, the arrow appears to move as *LinkWay* goes from one page to the next.

When you complete a LinkWay folder, you will set the Access level lower. Then other people who use your folder can click only once to activate a button. The double click is only used when you are creating a folder.

You can click anywhere in the rectangle you drew when you placed the button over the arrow. Clicking on the button causes *LinkWay* to move to the next page. Whenever you choose **None** for the icon on a button, the entire rectangular area that you created becomes *selectable*. That is, you can click anywhere within the rectangle to make the button work.

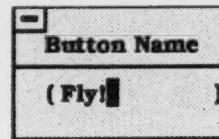
Editing Your Button

Once your button has been successfully created, you may want to modify it. Use the **Go to** menu to return to the page containing your button. Click once on the button to see the rectangular outline. You also see

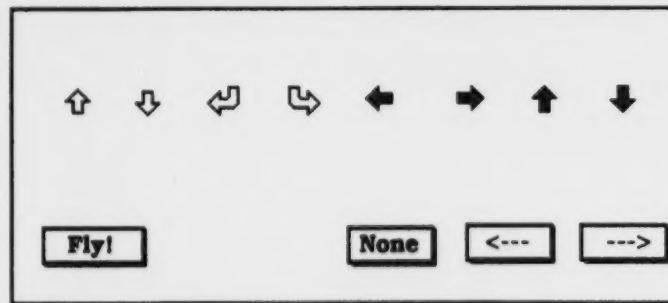
Go: <noname>

in the lower right corner of your page. This prompt reminds you that you have a button with no name that is a Go-type button.

With the button still selected, choose **Edit** from the **Object** menu. The **Button Name** window appears. Type *Fly!* between the parentheses.



Click on the Close Dot. When the icon window appears you see that Fly! appears as one of the choices.



Click on Fly! in the icon window. When the Go To window appears, click on the Close Dot since you still want the button to link to the next page. You now see something like this.



Since you chose a name for our button, the entire rectangular area of the button is no longer selectable. Thus, you probably want to move your button to a different position, for example,



To move your button, select **Move+Size** from the **Object** menu. A small rectangle appears. Draw a rectangle at the position you want your Fly! button to appear. Make it the size that you want to use. When you click the mouse button the second time, the button moves to the new location. Experiment until you are satisfied with the position of your button.

Creating Icon Buttons

The Fly! button takes the user to a new page on which the arrow has moved to the right. A Return button is needed to provide the user with a way to return to the first arrow page again. You could write Return on a new button, but there are other ways to label buttons so that people using your folder will understand how to move from page to page.

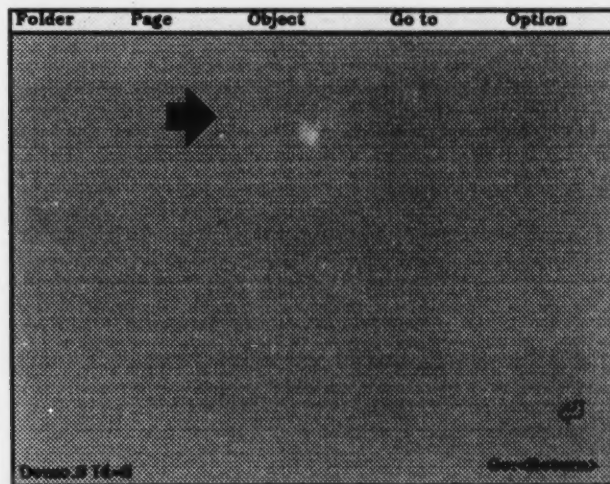
First, go to the page that shows the arrow moved to the right—double click on the Fly! button. Then create a new button by selecting the **New** option on the **Object** menu as you did before. Check **Button** in the **Object Type** window. Then click on the **Close Dot**.

A small rectangle appears. Click near the lower right side of the page and draw a rectangle there. When you click again, the **Button Type** window appears. Check **Go** and click on the **Close Dot**. When the **Button Name** window appears, give the button a name, perhaps **Return**. In general, it's a good idea to name all of the objects that you create in *LinkWay* since it helps you keep track of all of the components of your pages. Click on the **Close Dot** on the **Button Name** window.

Next, select a **Return** arrow from the **Button icon** window.



Finally, check **Previous** from the **Go To** window. Your folder now looks something like this.



If you are not satisfied with the location of your **Return** button, select **Move** from the **Object** menu and change the location of the button. If you

want to try a different icon, select **Edit** from the **Object** menu. When you reach the Button icon window, click on one of the dotted arrows,



and choose a different Return arrow icon from among the icons that appear.

You now have a button with a Return arrow icon on it in its proper location on the page. This button is linked to the previous page. If you double click on the Return button, the arrow moves to the left. If you double click on the Fly! button, the arrow moves to the right. You have accomplished this by creating two types of buttons:

- A button with a label (the Fly! button)
- A button with an icon (the Return button).

Hypertext

The above material familiarizes you with the basic mechanics of creating and using *LinkWay* buttons, but it only hints at the variety of uses for buttons. You can also use buttons to create *hypertext*. Move to the second arrow page in your folder, and select **Tools** from the **Object** menu. Start *LinkWay Paint*.

Create a new picture by selecting **New** from the **Picture** menu. Call it "Message." Next, select **Text** from the **Draw** menu. You see a small rectangle that looks like a cursor. Click once. The cursor changes to a vertical bar. Type the words

Time flies

Then click again. The vertical bar disappears and the text moves as you move the mouse. Select a spot on the left side of the screen and click the mouse again. "Time flies" is pasted to the new picture. Repeat this process twice until you have the text

Time flies

like an

arrow.

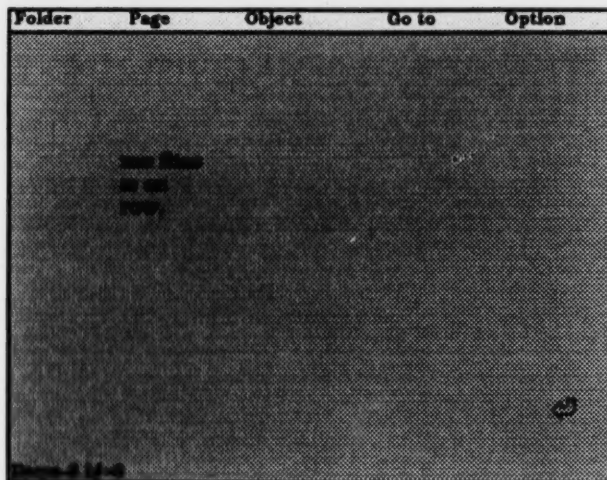
Click on the **Draw** menu again to stop entering text.

If you are not satisfied with the placement of your text, you can use **Copy** from the **Tools** menu to move it. Select the text you wish to move. Then click at the location at which you want the text to appear. You have two copies of your text. Use **Eraser** under **Tools** to remove any old text.

*You can also use **Shift** from the **Tools** menu to move text, but **Shift** moves the entire picture and can take quite a while on a slower computer.*

Next, select **Save** from the **Picture** menu and save your picture using the name **Message**. Choose **Exit Paint** and return to your *LinkWay* folder.

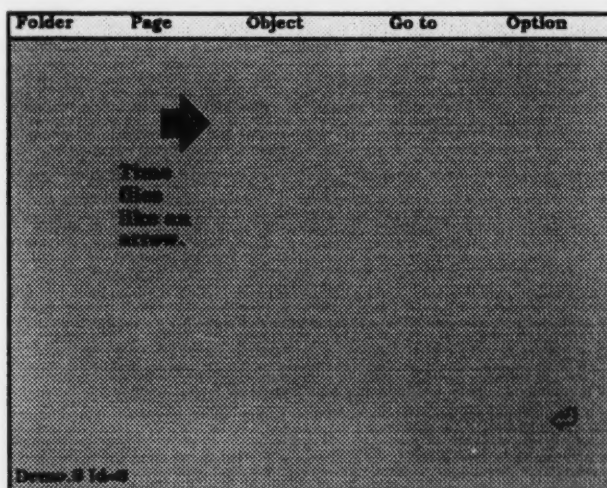
Be sure you are on the page containing the arrow and the Return button. Choose **New** from the **Object** menu and check **Picture**. Select an area in the upper left corner of the page. Name your picture "Flies." You may see something like this.



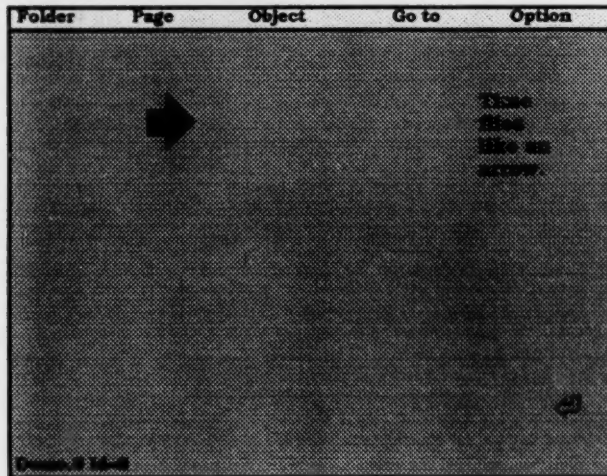
If part of your text is not visible, select the picture by clicking on it. Be sure you see

`Pictr:Flies`

in the lower right corner of the page. Then choose **Edit** from the **Object** menu. Use the **Adjust** menu to move the picture until all of the text appears.

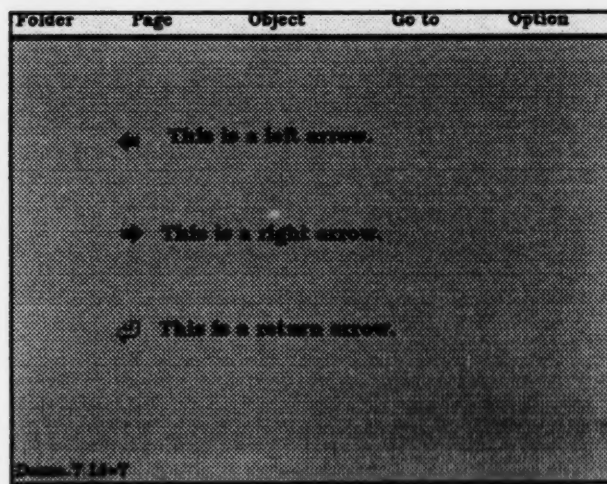


When you have all of the text showing in the upper left corner of the picture rectangle, click outside the Adjust menu. Note that all or part of the picture of the arrow may still be covered by your Flies picture. Click on the picture again and select **Move+Size** from the **Object** menu. Place the picture Flies that contains the text towards the right side of the screen. Your page should look something like this.



Now you are ready to create a button that will take you to a page containing different kinds of arrows if you click on the word "arrow." To do this, you need to create a new page with additional information about arrows. From the **Page** menu, select the **New** option.

Next, go to *LinkWay Paint* and create a picture with some arrows and explanations on it. Keep in mind that any text that you create using *LinkWay Paint* is painted onto the screen and cannot be easily modified. As you are working on your page or arrows, you are free (and encouraged) to be more creative than we were.

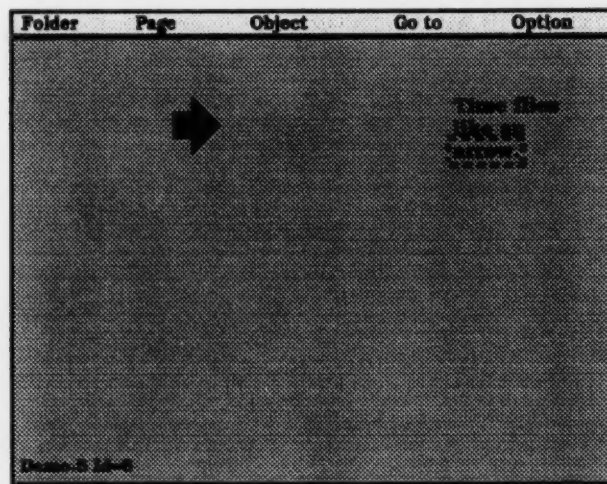


Then put your picture about arrows on the new page in your folder.

A Hypertext Button

After creating the page of arrows, use the **Go to** menu to return to the page with the "Time flies" text. We want users to be able to click on the word "arrow" on this page, and be taken to the page with more information about arrows. To enable them to do this, we are going to create an invisible button by using the following steps. You have previously completed each of these steps when creating the Fly! and Return buttons. This will give you additional practice in creating *LinkWay* buttons.

1. Select **New** from the **Object** menu and select **Button**.
2. Use the small square that appears to draw a rectangle around the word "arrow."



3. Select Go from the Button Type window. Name the button Toarrows.
4. Choose None from the Button icon window.
5. Check Next from the Go To window.

Once the button is positioned over the word "arrows," click twice on the word "arrow." *LinkWay* takes you to the page with more information about arrows.

If you want to be able to return to the page containing the "Time flies" text,

1. Go to the "Time flies" page.
2. Click on the Return button.
3. Select Cut from the Object menu and place the copy of the button in the SCRAP file.
4. Go to the page containing the information about arrows and select Paste from the Object menu. Paste the Return button at the bottom right of the arrows page.

Clicking twice on the return arrow button on the page about arrows moves you to the previous "Time flies" page. Clicking twice on the return arrow button on the "Time flies" page takes you to the first page with the Flies button on it.

Using a Link Button

Perhaps you would prefer to link the page with arrow information to the first page that has the Fly! button on it. To accomplish this, first note the Id number of the page with the Fly! button on it. Then follow these steps.

1. Be sure you are on the page with the information about arrows on it.
2. Select **New** from the **Object** menu and select **Button**.
3. Using the small rectangle, place the button on the lower right side of the screen.
4. Check **Link** on the **Button Type** window.
5. Give the button the name **Tofly**, and then select a return arrow from the **Button icon** box.
6. You then see the **LINK Information** window.

LINK Information	
Folder	(
Page ID	(

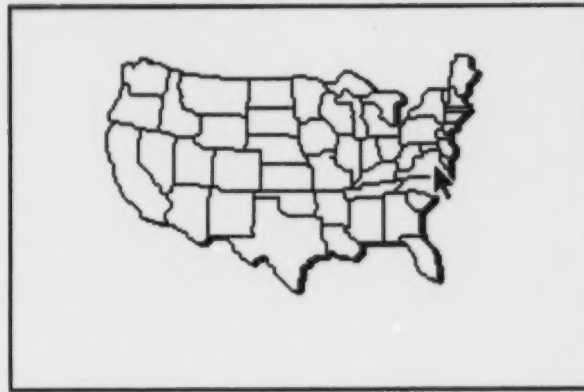
Type the Id number of the page with the **Fly!** button after **Page ID**. Click on the **Close Dot**. You do not need to enter the folder name unless you are linking to a different folder.

Finally, test your button by double clicking on it. You should be able to go directly from the page of arrow information to the page with the **Flies** button on it.

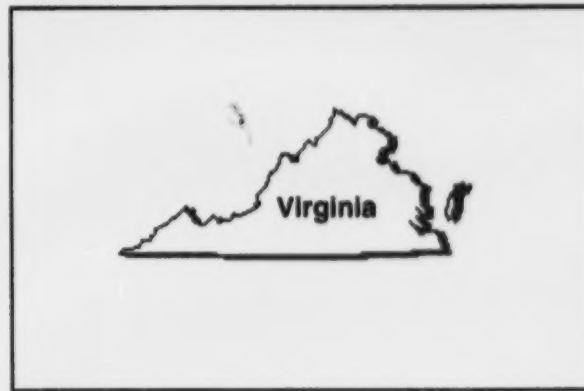
New Structures

In a traditional book, pages are read in a linear fashion from beginning to end. With hypertext, it is possible to go from any point to any other point. For example, a medical student reading about the corpus callosum in a hypertext document might simply click on the phrase to see additional information about that anatomical structure. In more advanced systems, the student might also see a slide or movie of the structure in addition to the textual information.

The concept of the invisible button can be used for many other applications in addition to hypertext. For example, in the first chapter, we mentioned that an invisible button could be placed over a state on a map of the United States.



Placing the cursor on a state and clicking the mouse button could then take the user to a second page with a more detailed drawing of the state.



Summary

Now that you have mastered creating and linking pages in different ways, a whole new world of educational materials is open to you, in which buttons link information in nonlinear structures. Buttons are the keys to this new type of computer-mediated exploration. In this chapter we have shown you how to create three different types of *LinkWay* buttons:

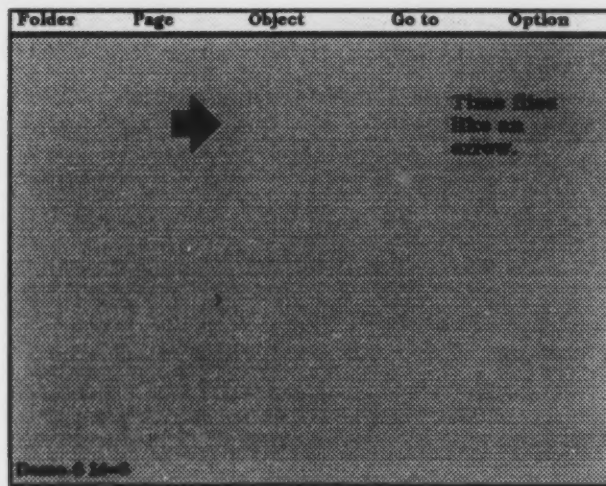
- Buttons with labels (the Fly! button)
- Buttons with icons (the Return buttons)
- Invisible buttons (the invisible button over the initial arrow and the hypertext button over the word "arrow")

Chapter 3. *LinkWay* Fields

You have learned how to incorporate pictures into *LinkWay* using *LinkWay Paint*. You have learned how to make buttons and how to link pages using those buttons. In this chapter we will discuss *LinkWay* fields.

Two Types of Text

In the previous chapter, text was created with *LinkWay Paint* to put a message on the second arrow page. Text created with *LinkWay Paint* is called paint text.



Text can also be placed in a *LinkWay* field. Text in a *LinkWay* field differs from text created with *LinkWay Paint* in two very important ways.

- Text created in a *LinkWay* field can be edited at any time. Text created with *LinkWay Paint* cannot be altered at all in *LinkWay* and cannot be edited in *LinkWay Paint*.
- The size of text in a *LinkWay* field can be changed without retyping the text.

Try modifying the Message picture—the one containing “Time flies”—using *LinkWay Paint*. Open *LinkWay Paint* by selecting **Tools** from the **Object** menu. Then select **Open** from the **Picture** menu. Open the Message picture. (If you no longer have that picture, create a new picture and put some text on the screen.)

If you place the cursor on letters that are already in place, the new letters you type go on top of the old ones. You cannot read either the old text or the new text.

Try using the Eraser. You can erase the text in a picture in the same way that you can erase any other part of a picture.

**Time flies
like an
arrow.**

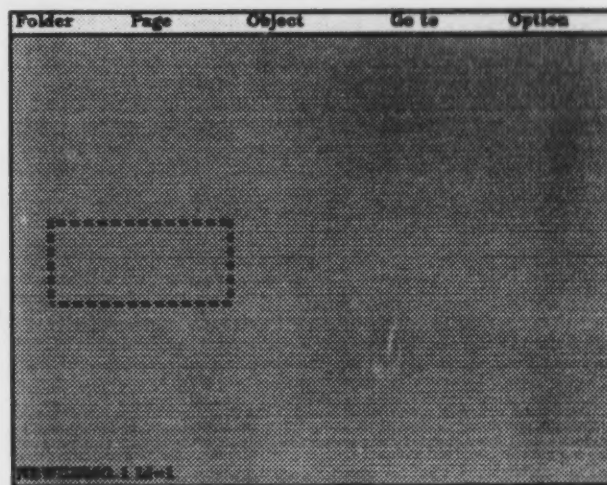
Text that can be removed using the Eraser is called paint text. It cannot be edited the way text in a word processor is edited.

Return to *LinkWay* by selecting **Exit Paint** from the **Picture** menu.

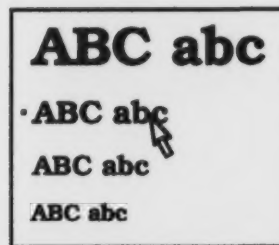
Creating a Field

Resume your investigation of *LinkWay* fields by creating a new folder. Select **New** from the **Folder** menu. Name your folder **NEWDEMO**.

Then choose **New** from the **Object** menu. Check **Field** in the **Object Type** window. After you click on the **Close Dot**, the usual rectangle appears. Place the new field as shown.



Next you see a choice of type sizes. There is a small dot next to the size of text that will be used in your field. To change the text size, click on the appropriate line of text.



Next, you see the Field Information window. Enter a name for your field and then click on the Close Dot.

FIELD Information	
Name (Enough)	
# of chars	(29)
# of lines	(5)
☐ Unlocked	
☐ Locked	

If you are working on a colored monitor, you will be asked to select a color. After selecting a color, you see your field outlined on the screen.

Entering Text in a Field

Move the arrow pointer so that it is over the field. Click twice. A left bracket ([) appears. Type several letters. The letters you type appear to the left of the left bracket cursor. Click at another place in the field. Type a few letters again. You can click anywhere in a field to place your text.

Whenever you select a field, you must double click to place the cursor in the field. You can place the cursor at another location in the field by clicking only once.

When you have experimented with placing the cursor and typing a few letters, erase the text from the field. You can click to the left of a line and use the Delete key to remove text one letter at a time. Or you can click to the right of the text you want to remove and use the Backspace key. Do this for each line of text you wish to remove.

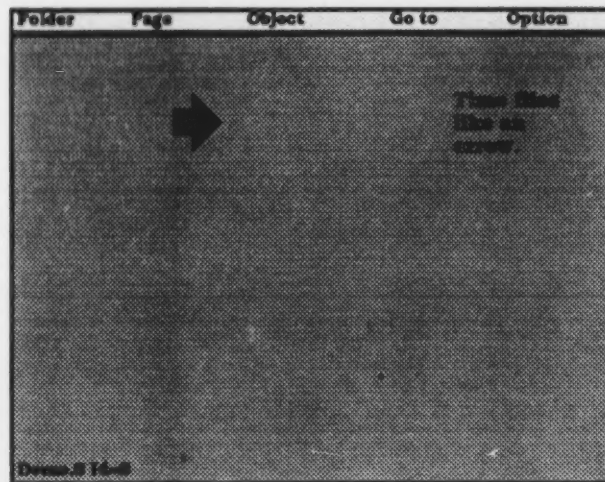
Now position the cursor in the upper left corner of the field. Type some text in the field. You might type something like this.

**There is never
enough time -
it just flies
away.**

Save your new folder.

Then select **Open** from the **Folder** menu and open the folder called DEMO that you created in an earlier chapter. You are going to get the page with the arrow and the text on it.

If your folder from the original chapter is unavailable, use LinkWay Paint to sketch a new arrow and create some paint text.

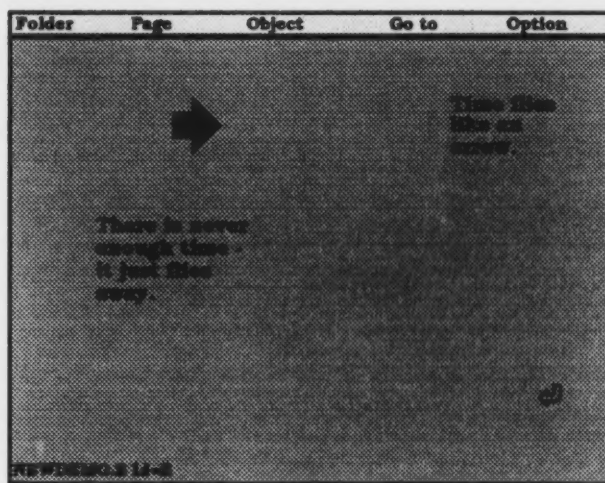


Select **Cut** from the **Page** menu. Put the page into the SCRAP file.

Next, open your new folder, NEWDEMO. Be sure you are on the page with the new field on it. Choose **Paste** from the **Page** menu. You now have two pages in your new folder. The first page contains a field. The second page contains an arrow and some paint text. You have put a copy of an entire page from the folder DEMO into the folder NEWDEMO.

Now go back to the first page. Click on the field to select it. Choose **Cut** from the **Object** menu. Put the field in the file SCRAP.

Go to the page with the arrow on it. Select **Paste** from the **Object** menu. A rectangle appears. Place the field on the page with the arrow.



Modify the text in the field if you wish. You must double click at the point in the field where you want the cursor to appear. Modifying text in a field is much easier than modifying paint text.

Pop-Up Text Fields

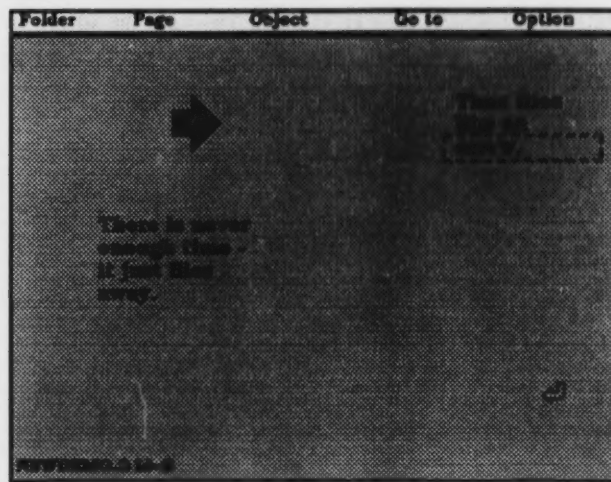
It is possible to create a text field that appears or disappears by clicking on a special kind of button. In the previous chapter, you placed an invisible button over the word "arrow." When the mouse pointer was placed over the word "arrow" and the mouse button was clicked twice, the button took the user to another page that showed a variety of arrows.

It is not necessary to send the user to a different page to see some appropriately related text or pictures. Instead, a *pop-up field* or a *pop-up picture* can be created on the same page where the word "arrow" appears.

First, create a new button.

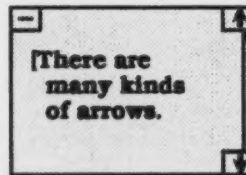
If you copied your page from the first folder, you must first remove the old button on the word "arrow." Click on the button to select it. Choose Delete from the Object menu.

Place the new button over the word "arrow." Make it wider than just the word "arrow."



When the Button Type window appears, check Text Pop-Up. Give the button the name "Def" and select None from the Icon window. A small scrolling field appears at the location of the new button.

Type some text in the field box.

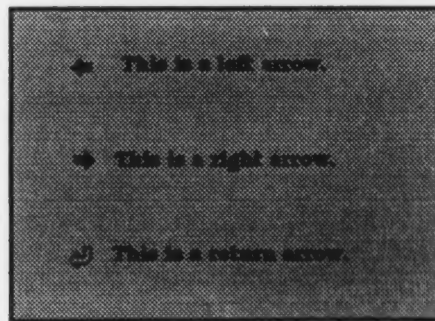


*If your field is too narrow, click outside the field. Then click on the new button and select **Move+Size** from the **Object** menu. Make the button wider. Then select **Edit** from the **Object** menu and enter text into the field.*

Click on the Close Dot. Now click twice on the word "arrow." The text field pops up. Close the field by clicking outside of the field or by clicking on the Close Dot. Unless your Access level is set to Read, you can edit the text in a Pop-Up field.

Pop-Up Pictures

In the previous chapter, you used *LinkWay Paint* to make a picture that contained some information about arrows.

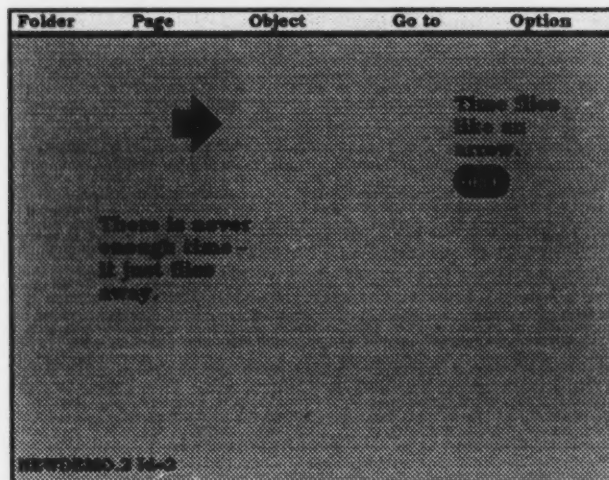


You can create a button that will pop up a picture rather than just text.

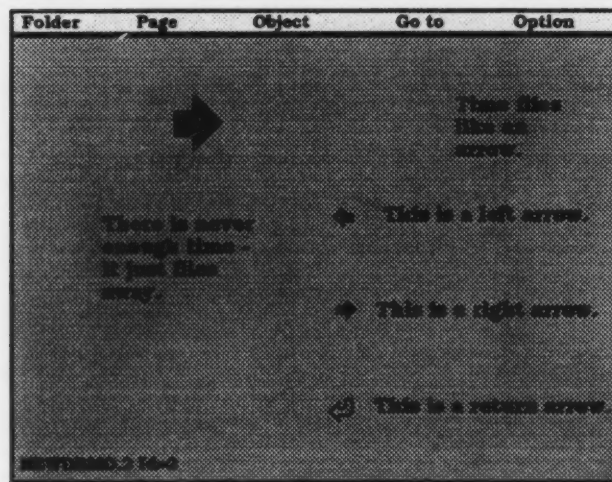
Create a new button. Make the rectangular area for the button large enough to display your entire picture. Check Picture Pop-Up from the Button Type menu. Name your button "Arrowpic." Select an appropriate icon. You might use an arrow or even the Help icon.

Next, from the Picture File window select the picture you want to have pop up. From the Adjust menu, select Fullpic. You see a rectangle that represents the area for the pop-up picture and you see your picture as well. Use the options on the Adjust menu to move the image into the rectangle for the button.

You then have a page that looks something like this.



Click twice on the button. You see your arrow-picture.



Notice that your picture covers any object "behind" it. Notice that the button icon disappears as well. Click outside the picture. The picture disappears and any objects that were covered by the picture reappear.

Summary

In this chapter you learned the difference between text created with *LinkWay Paint* and text created in a *LinkWay* field. Paint text created in *LinkWay Paint* can't be changed outside of *LinkWay Paint*. Paint text can only be modified using the paint tools. Text typed in fields can be edited much like the text in a word processor can be edited.

You also learned that you can create pop-up buttons. These buttons can be used to pop up either scrolling text fields or pictures either from *LinkWay Paint* or from clip art.

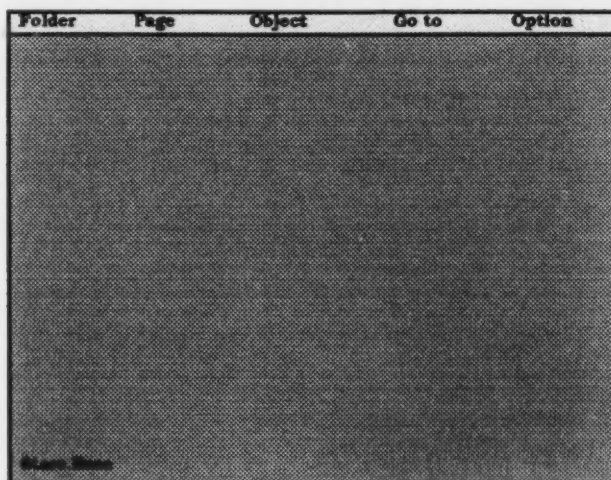
Chapter 4. Using Base Pages

In the first three chapters we discussed using *LinkWay Paint* to create pictures. You learned how to make buttons to link pages, how to create text fields, and how to make buttons to display both pop-up fields and pop-up pictures. In this chapter we will describe *LinkWay* Base pages.

Begin by creating a new *LinkWay* folder. When the **New** option is selected in the **Folder** menu of *LinkWay*, you get a new folder with a base page and one blank page. We named our folder "Stars."

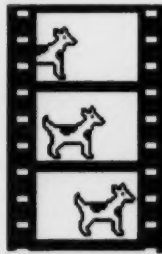
If you are using LinkWay and create a new folder, you are on the Base page. You must then use New from the Page menu to create the first page of your folder.

Use the **Go to** menu to go to the Base page. You see a blank page.



Understanding Base Pages

When the first animated films were created, artists created the illusion of movement by shifting the position of objects in each successive frame of the film.



It soon became clear that it was not necessary to redraw every object in the frame. Only objects with changed positions needed to be redrawn. Elements in the background could be left unchanged.

This was accomplished by drawing the background and foreground on separate celluloid panels. The clear celluloid panel containing the foreground objects could be placed over the background panel and photographed. This celluloid frame, or cel, as it is called in the film industry, could then be removed and replaced by another panel showing the foreground object in a slightly different position.

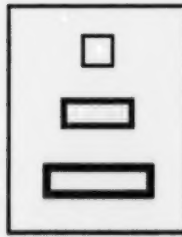
Today, these cels are collector's items, and ones from classic films such as *Fantasia* may be worth a considerable sum of money. *LinkWay* has the same capability of creating objects in foreground (on regular folder pages) and background (on Base pages).

Select **Base Page** from the **Go to** menu to go to the Base page. You can always tell when you are on the *LinkWay* Base page by looking at the lower left corner of the screen. In addition, none of the objects on other pages is visible.

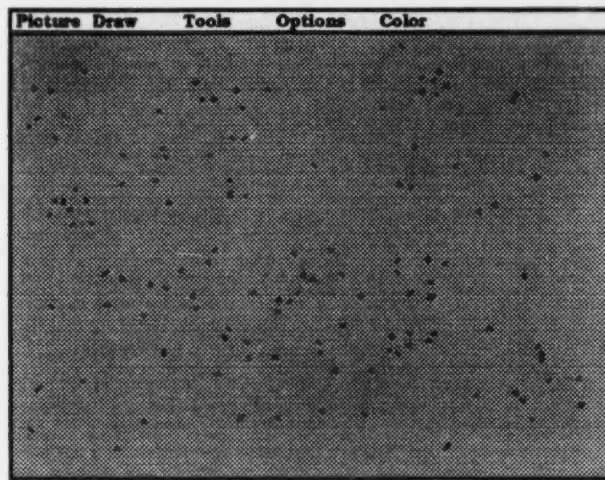
Creating a Base Page

To demonstrate how the *LinkWay* Base page functions, let's create a night sky as a backdrop. Then a planet in the foreground can be moved across this backdrop. You can copy some stars from clip art or use *LinkWay Paint* to make your own stars.

Open *LinkWay Paint* by selecting **Tools** from the **Object** menu and selecting *LinkWay Paint*. Create a starry sky. You might try using the **Air Brush** from the **Draw** menu. Every time you click the mouse you get a scattering of star-like dots. Try changing the size of the area used. Under **Options**, select **Set Width**. You see a menu like this.



Click on the top rectangle for the smallest brush width. Click on the bottom rectangle for the widest brush width. The smallest brush makes denser stars. The widest brush makes a sparser star field. When you are finished creating your night sky, it might look something like this.



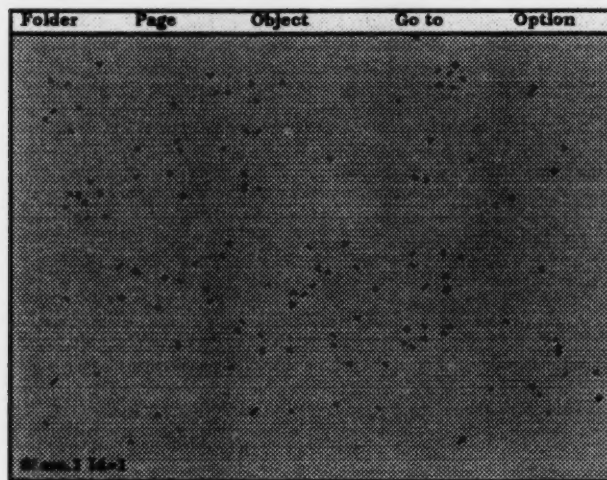
After you have created the star field picture, select **Exit Paint** from the **Picture** menu. Be sure you are on the **Base** page. Select **New** from the **Object** menu and place your star field picture on the page.

It is important that the night sky backdrop be created on the Base page. You will be able to tell if you are on the Base page mode because the name of your folder and "Base page" is in the lower left corner of your screen.

Next use the **Go to** menu to move to the first page of your folder. You should see your folder name followed by a 1. This first page should also have an ID of 1.

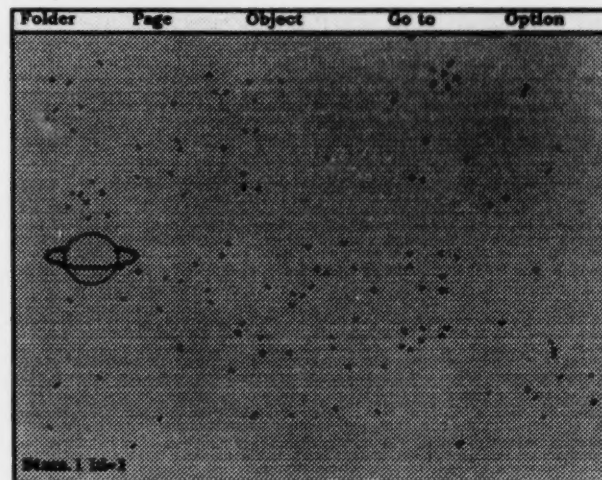
*If you are using LinkWay, recall that you need to create the first page for your folder by selecting **New** from the **Page** menu.*

When you move to the first page of your folder, you see your star field background.



However, you cannot access the star field picture from any page in the folder. To demonstrate this, click anywhere on the picture. Nothing happens. Now use the **Go to** menu to go to the Base page. Click anywhere on the picture. You see "Pictr:" followed by the name of your picture at the bottom right corner of the page. Go back to the first page. Click on the picture again. You see that you cannot select or edit the picture unless you are on the Base page.

Go to the first page in your folder. Add a planet. You might find a planet among some clip art. You can also use *LinkWay Paint* to draw a planet. You can use the circle tool to draw a planet with rings, like Saturn. When you are satisfied with your planet picture, return to *LinkWay* and place it on the first page in your folder. (Be sure that you put it on the first page and not on the Base page.)



Next create a new page by selecting **New** from the **Page** menu. When the **New** option is selected, you will find that you can see everything that is on the **Base** page, including the stars and any other **Base** page items, but not the planet added to the foreground of the first page of your folder.

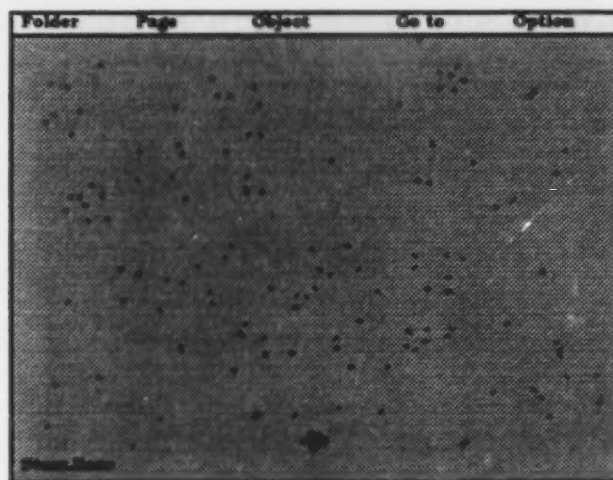
Recall that a new page is inserted after the current page. The second page in your folder should have an Id of 2.

By moving the planet across subsequent pages, an effect similar to that of animated films is achieved. Return to the first page of your folder. Select the picture. Choose **Cut** from the **Object** menu. Be sure you see the **Cut** completed window. Go to the second page of your folder. Choose **Paste** from the **Object** menu. Place the picture so that the planet's position on the second page is slightly to the right of its position on the first page.

Repeat this process of adding pages and pasting the picture of the planet shifted slightly to the right. Note that you do not have to cut the picture each time. Once it is in the **SCRAP** file, you can simply paste it on a little further to the right on each new page. Finally, use the **Go to** menu to move from the first to the last page of your folder. An animation-like effect is achieved this way.

A button can also be created to automate the process of going from one page to the next. There are a couple of different ways to create an animation effect. For example, a button can be placed on each page that links to the next page. This is the method that was used to move the arrow across the page earlier in this book. You then click on the arrow repeatedly to move from page to page.

Another approach is to put the button on the **Base** page. Go to the **Base** page. Create a new button by choosing **New** from the **Objects** menu. Place the button near the center bottom of the **Base** page. Use a right arrow for the icon for the button. Make the button a **Go** button and select **Next** from **Go To** window.



Now return to the first page in your folder. You can see the arrow button because it is on the Base page. Double click on the button. You move to the next page. You can flip through your entire folder by repeatedly clicking on the arrow button; however you needed to create only one button.

Creating an Auditory Prompt

Sometimes you want to tell users of your folder that they have moved to a different page in more than one way. You can easily add an auditory prompt to your arrow button on the Base page.

Go to the Base page and click on the right arrow button. Select **Delete** from the **Object** menu. Create a new button and choose **Script** from the **Object Type** window. Check **Regular action**. Select the same right arrow icon that you used previously. A window appears.



This is the script window. Enter these lines as shown.



Be sure that you have typed the commands as shown. Even the smallest typographical error can cause your program to go astray and fail to work. Once you are sure the commands have been entered correctly, click on the Close Dot.

This *LinkWay* script says to produce a beep sound and then go to the next page. *Seq* is a function that returns the number of the current page. By adding 1 to the current page number, the *go* command moves to the next page.

After you have closed the scripting window, try the new program by double clicking on the right arrow button. The planet should appear to move across the screen as the program moves from one page to the next. Each time you click the button, you should hear a beep sound.

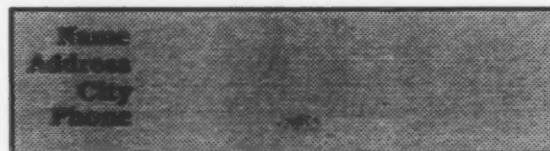
LinkWay Database

The examples described in the previous section use the metaphor of cels in an animated film to introduce *LinkWay* Base pages. The next example will illustrate how the features of a *LinkWay* Base page can be used to construct a *LinkWay* database. The ability to create reports in *LinkWay* is not strong, and other restrictions limit its use as a substitute for a conventional database such as *Filemaker II*. However, it can easily be used to construct a set of electronic pages that make up an address book, the catalog of a record collection, or a recipe file.

To begin, create a new folder and then go to the Base page. Check the lower left corner of the screen to be sure that you are on the Base page. Choose **New** from the **Object** menu. Create a field. Select one of the larger type sizes and type labels for "Name," "Address," "City," and "Phone." Recall that you must double click to begin entering text in a field. Line the text up on the right.



Next, select **Box** from the **Page** menu. Draw a box around the outside of the labels, leaving space for data to be entered.



Then, select **New** from the **Object** menu and create a new button. The button should be a **Go** button that is linked to the next page in the folder. Use a right arrow for the icon on the button.

Folder	Page	Object	Go to	Option
Name Address City Phone				

Now go to the first page in your folder. Then create a new field. Place the field so that data can be entered after the labels.

Name:	
Address:	
City:	
Phone:	

Finally, select Cut from the Page menu. Be sure you are on the first page and not the Base page. Then paste several copies of the first page into the folder. You will want to paste extra blank pages into your folder. When you want to add more names and addresses at a later date, you will have pages ready for you to enter your data.

Entering Information Into the Address Book

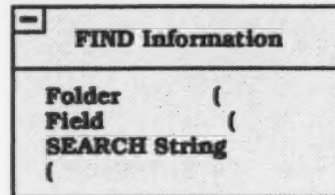
Go back to the first page. Double click in the field next to the word "Name" and begin entering data.

Name:	John Davis
Address:	State Street
City:	Oakton
Phone:	991-2164

After the first page in the address book has been completed, use the arrow to go to the next page. Continue entering information into your address book until three or four pages in the address book have been completed.

Using the Address Book

Once several pages have been entered, you will be able to search the address book for specific names. To do this, choose the **Find** option from the **Go to** menu. You see this window.



FIND Information	
Folder	(
Field	(
SEARCH String	(

Under **SEARCH String**, type the name of the person on the page you wish to locate, and click on the **Close Dot**. *LinkWay* will take you to the page with the name you have selected. Of course, you can also search for other information, such as a street name or phone number.

Summary

In the previous three chapters, you learned how to use *LinkWay Paint*, how to create buttons, and how to create fields. In addition, you learned to use a variety of types of buttons: go buttons, link buttons, pop-up text buttons, and pop-up picture buttons. In this chapter, *LinkWay Base* pages were added to the list of available *LinkWay* techniques. *LinkWay Base* pages were used

- as the basis for a form of animation
- as the basis for a simple database.

Chapter 5. *LinkWay* Folders

In the first four chapters, we discussed pages, buttons, fields, and the use of Base pages. In this chapter, we will discuss how these four design elements are combined to form a *LinkWay* folder.

A folder should have a consistent design. Each feature should work in the same way throughout the pages. For example, if a Return Arrow is used to go to the previous page, this symbol should be used for the same function on other pages. This prevents users from becoming confused and assists them in their exploration.

The sample folder we will develop in this chapter is based on the famous story of Ulysses and the Cyclops, found in Chapter IX of Homer's *Odyssey*.

*Oh Muse, tell me about the man, you know, the crafty one,
who was hounded for so long after destroying the holy city of Troy.*

So begins one of the two greatest epics by the best epic poet. There is some educational software based on literary classics that is intended to be used in lieu of reading the original. However, that is not the underlying purpose of our *Odyssey* folder. In this case, we've adopted the model of an adventure game, and the educational purpose is motivation rather than direct instruction. Using the folder (playing the adventure game) is intended to introduce students to the main characters and events of the *Odyssey* and encourage them to return to a printed version of the book for more detailed information. Users who make the same decisions that Homer's Ulysses made are rewarded by the gods! Teachers could use this activity as an introduction to a unit on the *Odyssey*, epic poetry, or heroes in mythology.

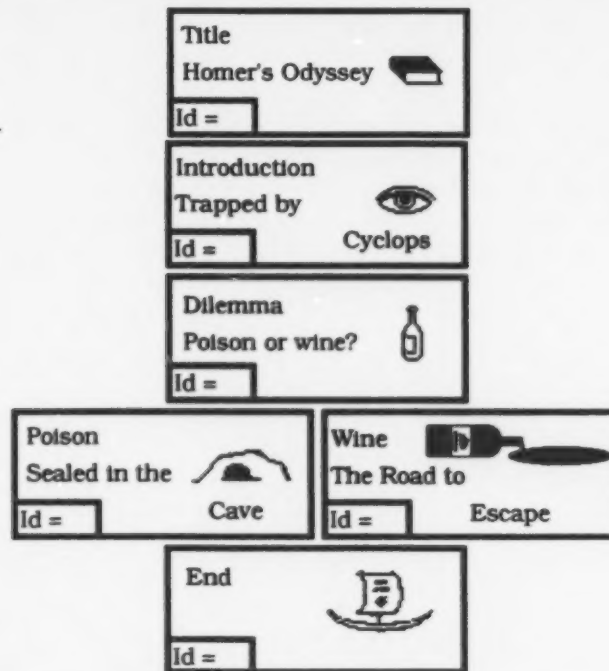
In the section from the *Odyssey* we have selected, Ulysses and his men have been captured by an evil, one-eyed giant named Polyphemus. Those who have read the book will be familiar with the clues needed to escape this cyclops. The example we are going to develop in this chapter is a fragment of what could become a larger folder. Once you understand the design principles for the basic folder, you will be able to add to the folder on your own or adapt the template for other applications.

The Story Line

It is often helpful to sketch out the pages of a folder on note cards. Since *LinkWay* is based on the metaphor of electronic pages, paper note cards can simulate the pages that will be in the folder that is created later. Some teachers pin the cards to a bulletin board and use string or strands of yarn to simulate links between different pages.

We will use six pages in the folder we will develop. Identifying pages is an important element in folder design. Describing pages carefully makes it possible to refer to pages during folder development, and it also makes it easier to debug the folder when scripts are written.

The first page in our folder will be the "Title" page. This will be followed by an "Introduction" page that describes the plight of Ulysses. He and his men have been trapped by a one-eyed Cyclops. The third page describes the "Dilemma" they face. Should they offer the Cyclops Ciconian wine or give him poison? The fourth and fifth pages, "Poison" and "Wine," respectively, describe the consequences of those possible actions. If the Cyclops is poisoned, Ulysses will be trapped because only the Cyclops is strong enough to roll the boulder away from the mouth of the cave. Wine is a better choice that will lead to escape. (Students who have read the book will know which choice the real Ulysses made.) The sixth page is the "End" page, which describes where to find out more about Ulysses. Be sure to leave space on each note card for the Id number of the page when you create it in *LinkWay*. Noting the Id number on your note-card model makes keeping track of your pages much easier.



Chapter IX of the *Odyssey*, from which this sketch is taken, is much longer, of course, and could be illustrated by dozens of pages detailing different events that take place. The six pages in this example illustrate a method that can be extended to encompass a longer segment of the story.

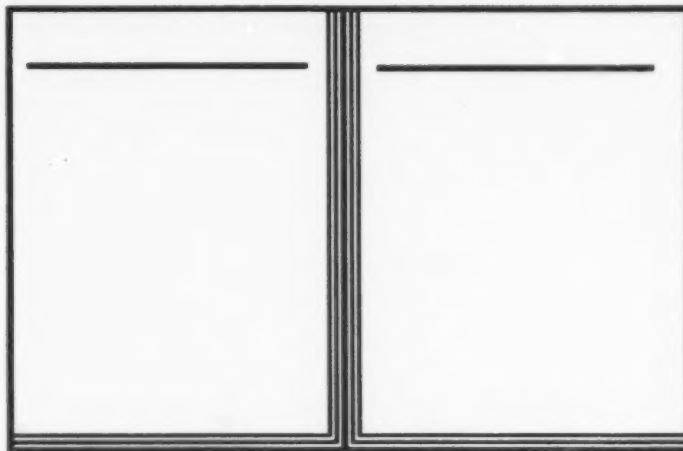
The Design

It is important to develop an overall design for a folder. Certain design elements that appear on every page unify the folder. For example, right arrows are usually used to tell the user to go to the next page in the folder. Design consistency helps establish the metaphor that a *LinkWay* application is a folder of electronic pages.

Creating a Base Page

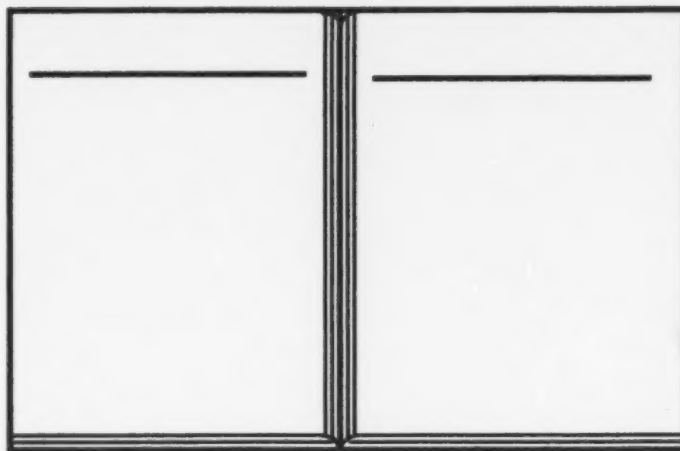
Each *LinkWay* folder has only one Base page. You should use this Base page to create a consistent design within your folder. Put on it all of the elements that are to appear on all of your pages.

Since the *Odyssey* is a book, we are going to adopt that as the underlying design for this folder. Create a new folder called Story. Go to *LinkWay Paint* to create an image of a book to put on the Base page of your Story folder. Select **Box** under **Draw** to create the border of the book. The picture of the book should cover most of your screen. Then use **Line** to create a vertical line in the center of the book. If you choose **Set width** under **Options**, you can create a wider line.



At the bottom of the book, extra lines represent the edges of the pages. Extra lines in the middle give the effect of depth. You can use **Pencil** to create these lines. If you hold down the **Alt** key before you start moving the pencil in a horizontal direction, it will help you to draw a straight line.

The book design might look a bit more realistic if there were an arc at the bottom inside to define the book's gutter (the place where the pages meet in the middle).



You can create arcs by first using the **Circle** under **Draw** to make a small circle.



Then use **Copy** under **Tools** to copy a quarter of your circle.



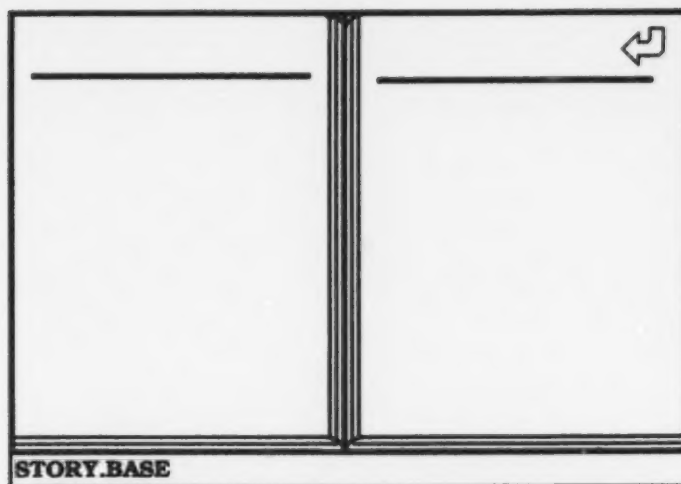
Next, carefully paste the quarter circle into one of the corners.



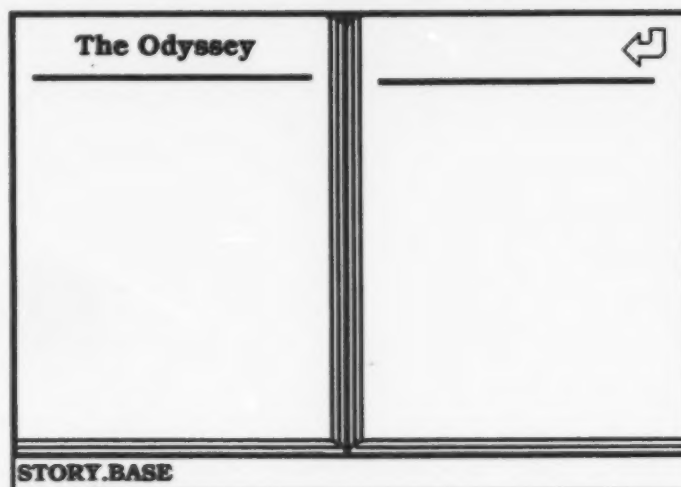
You may then need to adjust the lines that represent the edges of the pages.

When you are satisfied with the design for your book, choose **Exit Paint** and return to the Base page of your Story folder. Select **New** from the **Object** menu and place the picture on the page.

Next, in the upper right corner of the page add a **Return Arrow** button that will be used to return the reader to the title page of the *LinkWay* book. Create a button, select **Link** from the **Button Type** window, and link it with the first page of your folder. (Most likely this will be **Id = 1.**)



Now you need to add the book title. Select **New** from the **Object** menu and check **Field**. Place the new field at the top left of the book-page image. Double click to place the cursor and insert the title of the book.



Design Elements

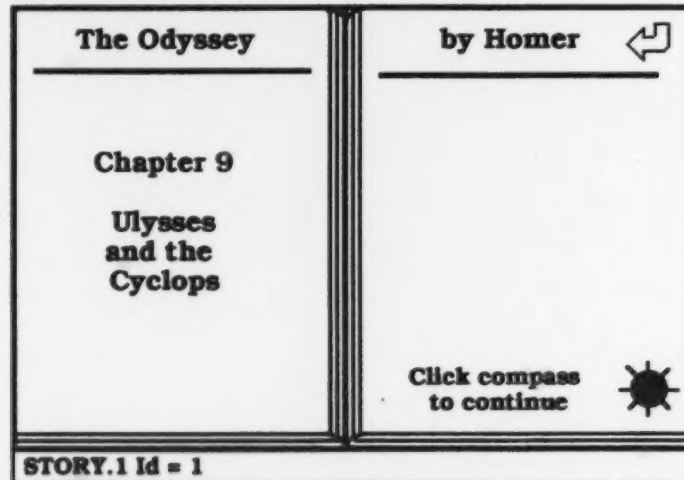
There are three important design elements on the Base page of this folder.

- The outline of an open book is the first design element. Since it is on the Base page, it will appear on every page of the folder.
- The Return Arrow button provides a second Base page element. This will provide users with a way to return to the Title page in case they wish to begin their "journey" again.

- The third design element is the title of the book, which will appear on every page in the folder.

Page 1—Title

Once you have finished the Base page, you are ready to create the Title page. Here is what ours looked like.



You can create a field to put the text on the page. You will probably want to use a smaller text size for the "Click compass" message.

The compass itself was created using *LinkWay Paint*. We created a small circle and then used **Fill** under **Tools**. Four lines were used to make the compass points. The small compass picture was then placed on the page.

Creating a Link to the Next Page

Next, create a new button by selecting **New** from the **Object** menu. Place the button over the compass picture. Select **Go** from the **Button Type** window and choose **None** from the **Icon** window. Finally, select **Next** from the **Go To** window. Since the button has no icon, you have created a transparent button. Because it covers the compass picture, clicking anywhere over the picture will activate the button. We will test this button after creating page 2.

Page 2—Introduction

Since Page 2 looks a lot like Page 1, you can select **Cut** from the **Page** menu. Put the page in **SCRAP** and then paste a new page into your folder. The new page will be immediately after the first page. Replace the text "By

Homer" with the text "Introduction." Remove the text on the left and insert the following text into the field.

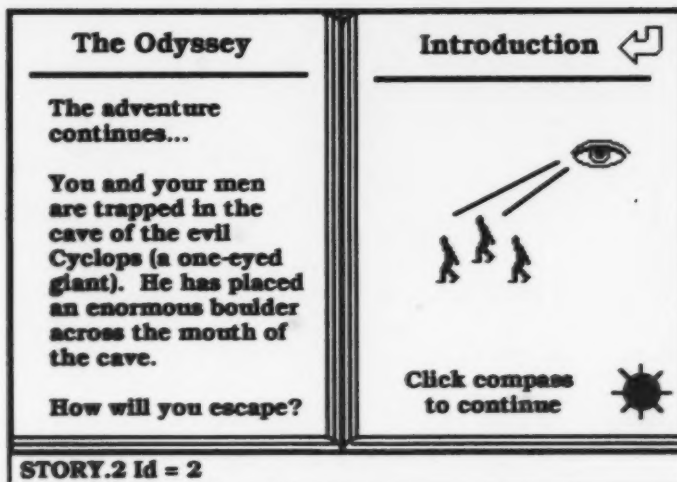
The adventure continues ...

You and your men are trapped in the cave of the evil Cyclops (a one-eyed giant). He has placed an enormous boulder across the mouth of the cave.

How will you escape?

This introduction lets the reader know that this folder begins in the middle of an adventure. It also describes the predicament facing Ulysses and his men. The right page can be used for an illustration. We chose to show the single eye of the Cyclops watching Ulysses' men. You can use your own graphic design, or even wait to add this illustration until later if you wish. You might choose to locate some appropriate clip art or perhaps draw your own graphics by using *LinkWay Paint*.

Our completed Introduction page looked like this.



Successive Approximation

By copying the page, we can be sure that the fields and the Compass picture and button are in exactly the same place. However, now we need to test the Compass button. Select **Previous Page** from the **Go to** menu to return to the Title page. Then try out the Compass to see if it takes you to the Introduction page. Does it work?

Next, test the Return Arrow in the upper right corner of the Introduction page. Does it take you to the Title page?

Troubleshooting Tip: If the Compass button does not work, check the following:

- Be sure that the button is really on top of the picture. (Click once to see the outline of the button.)
- Be sure that you have a Go button. (Click on the button to see the type of button displayed at the bottom of the page.)
- Make sure that the button you created is set to go to the Next page. (Click on the button, select **Edit** from the **Object** menu and click through the windows until you get to the Go To window.)

If the Return Arrow button does not work correctly, go to the Base page and check the following:

- Be sure that you have a Link button. (Click on the button to see the type of button displayed at the bottom of the page.)
- Make sure that the button you created is set to link to the Title page (Id=1). (Click on the button, select **Edit** from the **Object** menu and click through the windows until you get to the Go To window.)

There is an extremely important principle to remember as you are developing folders: Work in small steps. This makes it easier to locate problems. It is better to identify any problems with the Compass button now rather than later, after four more pages have been made.

If the both of the buttons work, you are ready to continue. If not, you should take time to fix them now.

Page 3—Dilemma

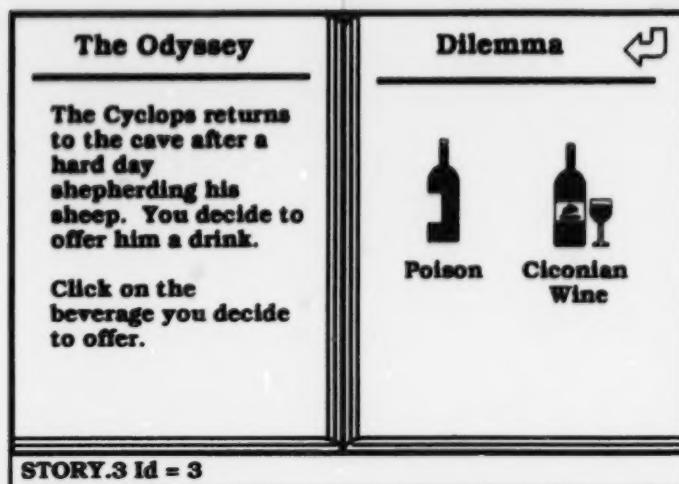
Next, create the next new page, Dilemma. Remember that you can simply cut an existing page, or simply use **Paste** if the appropriate page is already in SCRAP.

Enter the following text on the left side of the new page.

The Cyclops returns to the cave after a hard day shepherding his sheep. You decide to offer him a drink.

Click on the beverage you decide to offer.

Our page looked like this.



Create this illustration now—either with clip art or by drawing your own—and label the bottles. These pictures will be needed for the buttons that will be created next.

Take a moment now to be sure that the compass button on the Introduction page correctly moves you to the Dilemma page. You might also check to be sure that the Return Arrow button in the upper right corner takes you from the Dilemma page back to the Title page. If everything seems to be working correctly, you are ready to move to the next step.

Links to Pages 4 and 5

Until now, each page has led only to the next one. At this point in the story, there are two choices: poison and wine. One choice will lead to Page 4, while the other will lead to Page 5. *LinkWay* makes it easy to provide different choices. This method could as easily be used for multiple-choice questions.

Create an invisible button and place it over the poison bottle. The button must be of type Link. In the LINK Information window enter an Id of 4 even though there is not yet a fourth page in your folder.

When the button is created, test it by clicking twice over the poison bottle. *LinkWay* tells you that it cannot link to a page with Id 4. This is a good way to check to see if your button is set up correctly even though you have not yet created the page.

Create a second invisible button and place it over the wine bottle. Link it to a page with Id equal to 5. Test your button to be sure you set up the link correctly.

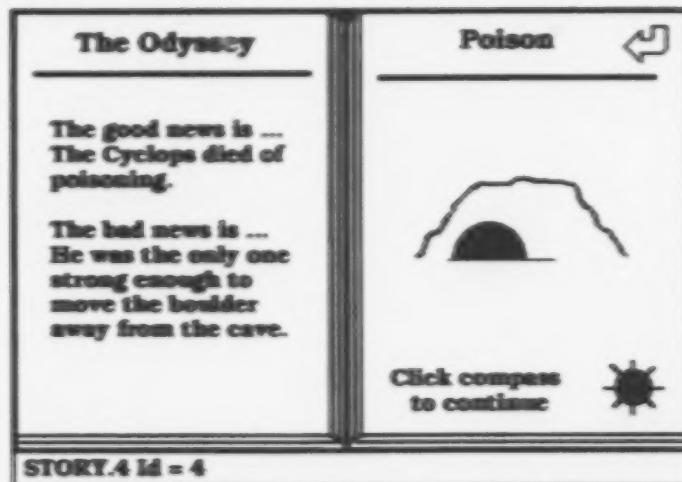
Page 4—Poison

To create the Poison page, you may want to copy the Introduction page again so that the Compass button will remain in the correct place. However, be careful that you go to the Dilemma page before you paste the page. Remember, a page is pasted *after* the page that is on your screen.

Enter the following text in the field on the left side of the page.

The good news is ...
The Cyclops died of poisoning.
The bad news is ...
He was the only one strong enough to move the
boulder away from the cave.

Our page looked like this. You can add an illustration of your choice now or wait until later.



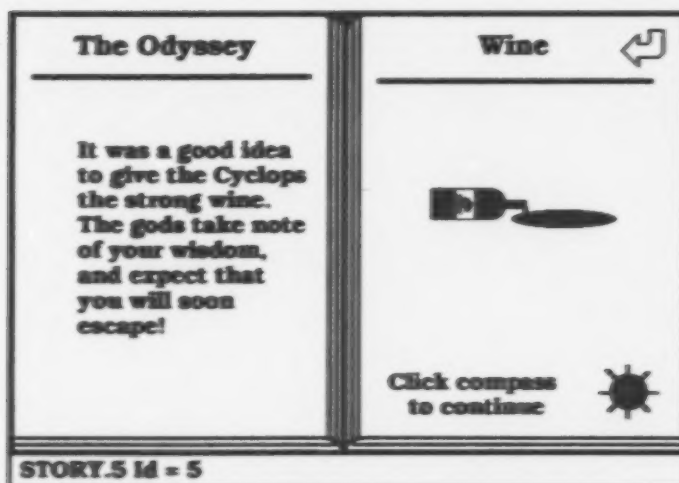
You no longer want the compass button to link to the next page. Rather, it should link to the last page in the folder. Click on the compass button and select **Delete** from the **Object** menu. Then create a new transparent button. This button should be a **Link** button that sends the reader to the End page (Id=6).

Page 5—Wine

After the Poison page has been completed, create another new page and name it Wine. Enter the following text on the left side of the page.

It was a good idea to give the Cyclops the strong wine. The gods take note of your wisdom, and expect that you will soon escape!

Our Wine page looked like this. You can create the illustration now or wait until later.



Since the compass button links to the next page, the End page, no changes need to be made.

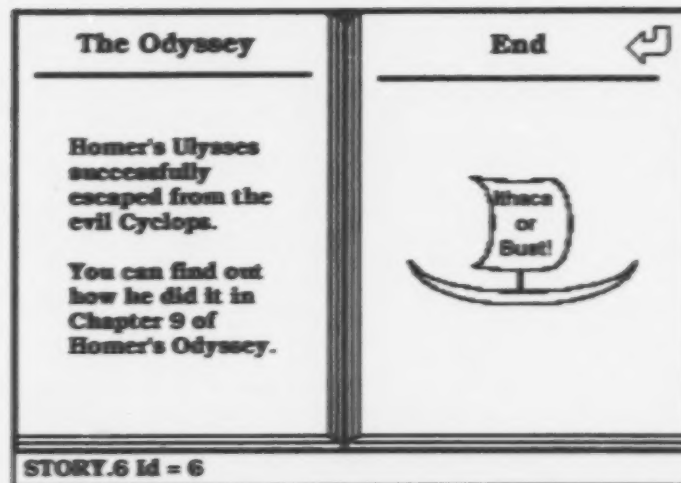
Take a moment now to check the links on the Poison and Wine pages. Also check to be sure the compass button on both the Poison and Wine pages works correctly. When you are sure all of the links work correctly, you are ready to finish your folder.

Page 6—End

Create the last page in the folder. Enter the following text on the left page of the page.

Homer's Ulysses successfully escaped from the evil Cyclops. You can find out how he did it in Chapter 9 of Homer's Odyssey.

The End page we made looked like this.



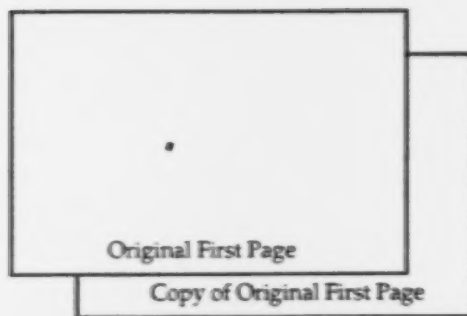
Notice that the Compass button was not included on this page. If you want to start the story again, you can click on the Return Arrow. Otherwise you can select **Exit LinkWay** from the **Folder** menu.

The Order of Pages

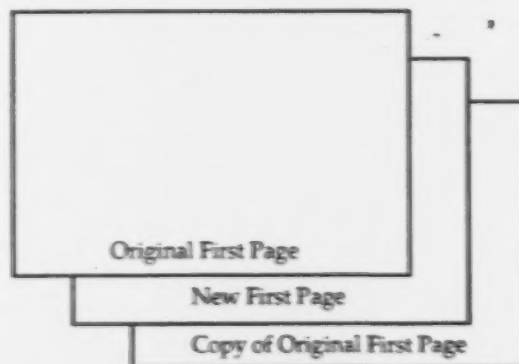
In this folder the Title page is also the first page. The page you want to appear when the folder is opened may not always be the first page in the folder. You can rearrange pages in a folder by using **Cut** and **Paste**. You can **Cut** a page and put a copy of that page where you want it by using **Paste**. Then, you can move to the page *before* the spot where you want the page and **Paste**. After you are finished, you can then select **Delete** to remove unwanted pages.

Replacing the first page of a folder can be tricky, however, since pasting always puts the new page after the one you see on the screen. To insert a new first page in your folder

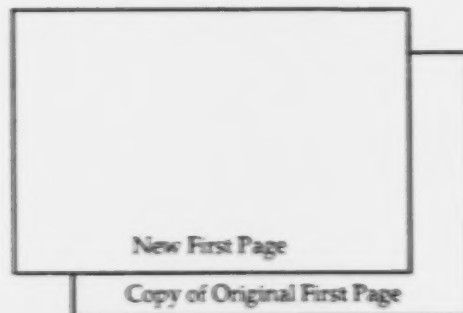
- cut the *current* first page of the folder
- paste a copy of the current first page. The first two pages of your folder are now identical.



- Cut the page you want to become the first page of your folder.
- Go to the first page of your folder—you will be looking at the first of two copies of the current first page.
- Paste the page you want to be the first page. You now have original first page, new first page, and the copy of the original first page.



- Delete the original first page. The new first page is now where you want it.



- Now delete the original copy of the new first page.

Be very careful, however. It is much better to have extra pages in your folder while you are working than to accidentally delete a lot of work as you move pages from one place to another in a folder.

Debugging and Beta Testing

Each piece of the folder should be tested as it is developed. Once the six pages that constitute the basic structure of the folder have been completed, it is possible to try out the combined elements. Go through the folder and try the different options. Select the choice of Poison on one try, and select the option of Wine on the next. Try the different Return buttons, and make sure the Return button works.

Next, select **Access Level** from the **Folder** menu. Select one of the "lower" access levels, such as Read. Now test your folder again. Recall that you only need to click on buttons once when you are no longer at the Format access level. Be sure everything works at this new access level.

You and friends who may have watched you develop the folder are *alpha testers*. Once you are sure that everything works properly, it is time to try it out with users who have never seen the folder before. These users are known as *beta testers*. Frequently, you will be surprised to find that users who are not aware of assumptions that underlie the folder will find problems you have not identified. Resist the temptation to explain how the folder works. Just watch, and note any difficulties that new users encounter.

Hypermedia and Hypertext

Once the basic design is debugged and working properly, any number of enhancements are possible. A book is generally read in a linear fashion, proceeding from the first page to the last without deviation. An electronic medium offers many more possibilities. Pop-up text fields can provide additional information about key words and concepts, and buttons can be added to permit exploration in different directions.

For instance, Homer had much more to say about the race of Cyclops, describing them as rustic one-eyed barbarians who did not grow crops and had no laws. A pop-up text window could provide additional information if the user clicks on the word "Cyclops." The word "dilemma" comes from the Greek root meaning "two assumptions." Hypertext makes it easy to provide additional information about the derivation of the word if the reader wants it, without interfering with the flow of the narrative for those who wish to pursue the story line.

Other embellishments can enhance the folder. A map of the ancient world showing the route Ulysses took on his epic journey could be useful. Different artists' conceptions of the Cyclops might be an interesting diversion, which could lead to a discussion of the probability that such a

race could exist. Excursions in the areas of biology, archeology, or poetry might evolve. Parallels between Homer's epic poem and the later poem *Ulysses*, by Tennyson, can be studied.

Hypermedia involves the ability to go from one point in a medium to another point without leafing through intervening pages. The ability to click on a *LinkWay* button and go directly to a related graphic, illustration, or page is a form of hypermedia. *Hypertext* is a specialized variant of hypermedia that involves a similar ability to go from one point in a text to another point. Pop-up text windows provide a kind of hypertext in *LinkWay*.

With conventional media it would be necessary to have a thesaurus, a dictionary, a biology text, an archaeological reference work, and other materials at hand as the *Odyssey* was read. *LinkWay* can be used to incorporate all of these materials into a single application. The degree of elaboration depends on the creativity of the developer.

Adapting the Template

The six pages outlined in this sample folder are just a starting point. There are many other branch points that might be incorporated into the plot line, rewarding users who make the same choices that the real Ulysses made. Here are some examples.

- What type of wood should be used to create a spear to blind the Cyclops? (Those concerned about violence in the cinema might be startled at the levels of violence in the classics.)
- What reply does Ulysses give when the Cyclops asks his name? (Ulysses said his name was "No Man," a ploy that figured prominently in his later escape.)
- What trick does Ulysses use to get past the blinded and enraged Cyclops at the mouth of the cave?

With minimal changes, the same template could be adapted for other stories. The underlying concept would work as well for *Huckleberry Finn* as for the *Odyssey*. (What should Tom Sawyer tell Aunt Polly? How can Huck and Jim escape the Duke?)

Instructional Strategies

The first impulse of a teacher might be to create elaborate and lengthy hypermedia applications for a class. However, even a modest *LinkWay* folder is time consuming to develop. Many teachers do not have the spare time for creating an appreciable number of hypermedia applications developed in any great depth.

An alternative to is to involve the class in development of the hypermedia application. It is true that the class will not know *LinkWay*. However, students can develop the design on note cards and use a bulletin board to chart the development of the folder design. If there are artists in the class, they can be assigned to create pictures and graphics. Others can be taught to enter text in *LinkWay* fields.

As much or more is learned in the creation of an educational folder as in the use of it. It will be necessary for members of the class to go to the library to consult references and resource documents. Are there other references to the Cyclops from ancient times? Who was Homer? What is the oldest copy of the *Odyssey*? Who translated it, and where is it found? The thesaurus, the dictionary, the encyclopedia, and reference works will be needed to answer these questions. It may be necessary to use the interlibrary loan system to get some references, or an interview with a local authority may be helpful.

Collaboration and cooperation among members of the class will be required since a project of this kind is often too large for any one person. The class will then have an "electronic book report" that can be shared with others.

LinkWay projects are frequently like gardening—there's seldom a sharply defined end because there's always a link to another bit of knowledge. The folder created by one class can be used as the foundation for continuation by another class the next year. The actual use depends upon the guidance and facilitation the teacher provides.

Deleting Folders

Unless you indicate otherwise, your work is automatically saved in the directory LLWORK. When you have been experimenting and exploring, it is a good idea to delete folders or other files that you no longer want to use. These extra files or folders simply take up space on your disk that you can use for other purposes.

Exit *LinkWay* and examine the directory of LLWORK. You will see the names of folders you have created. You will also see the names of pictures that you saved using *LinkWay Paint*. Most likely, you will see at least one SCRAP file. Your *LinkWay* documentation gives a list of the extensions used by *LinkWay* and what each one means.

You can then delete any files you no longer want by using DOS commands. Be careful. When you delete a folder, you are deleting the pages, buttons, and fields in that folder. Be sure that you know what is in any file before you delete it.

Summary

In the first four chapters, the basic elements of *LinkWay* were introduced: pages, buttons, fields, and Base pages. In this chapter, these elements were combined to create a *LinkWay* folder. The most important aspects of folder design take place away from the computer. Note cards can be used to design the folder before it is created on the computer. Resources from other folders can be incorporated into the development of a new folder. Each component should be tested as it is developed so that the folder is built through a series of successive approximations. The folder should later be tested with other users to identify unexpected problems.

Ulysses had great difficulty with navigation. It took him many years to return home. Your users should never be in doubt about where they are in your folder and should be able to return home with the click of a single button.

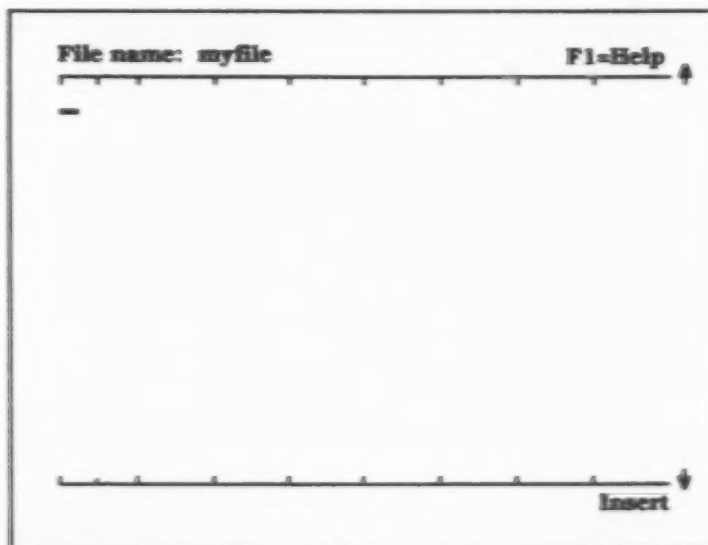
Appendix. *LinkWay* Tools

When you use *LinkWay Paint* to develop pictures for your *LinkWay* folders, you select **Tools** from the **Object** menu. You no doubt noticed that there were a number of tools listed in that window. Three of the tools that you might find useful at this stage of your work with *LinkWay* are discussed briefly in this appendix.

LinkWay Text Editor

From the **Object** menu, select **Tools** and choose **LWEDIT**. Type the name of a text file that you want to work with. You can create a new file or use an ASCII file created in a word processor. If you create a new file, be sure to remember the name you selected so that you can make use of it later.

A screen that looks very much like a word processor appears.



You can then enter or edit text that you will later access from *LinkWay* buttons. Pressing F1 gives you a list of commands that can be used in *LinkWay* Edit.

Key	Action
F1	HELP MENU
F2	Save text file
F3	Save file and exit
Shift F3	Quit (without saving file)
F4	Copy a file into text
Shift F4	Show text in reference format
F5	Search for a string
F6	Reflow text to screen width
Shift F6	Reflow text to cursor column
F7	Copy one line
Shift F7	Place copied line in text
F8	Print file
Shift F8	Switch between 50/80 column
F9	Delete current line
Shift F9	Join next line to this line
F10	Insert line above current
Shift F10	Split line into two lines
Ins	Insert mode
Backspace	Delete character to the left
Del	Delete character to the right
Home	Move to start of line
End	Move to end of line

You can also move the cursor using the arrow keys, Tab, Shift+Tab, PgUp, PgDn, and Enter.

Text files that are created with *LinkWay* Edit can be accessed from a *LinkWay* folder with either Document or Reference buttons. If you create a Document button, clicking on the button displays the *LinkWay* Edit screen exactly as you saved it.

To make use of a Reference button, you begin with your text in *LinkWay* Edit. Place the cursor on the top line of the file. Next decide how wide your Reference button will be. Move the cursor to a position that indicates the width from the left margin. Press Shift + F4. A vertical line appears and you see the text formatted as it will appear in the Reference button.

Next, return to *LinkWay* and create a new button of type Reference. When you click on your new button, the text created in *LinkWay Edit* appears in a window in your *LinkWay* folder.

***LinkWay* Font/Icon Editor**

The *LinkWay* Font and Icon Editor allows you to modify both the fonts and icons used by *LinkWay*. The word *font* refers to set of characters that are of a consistent style and size. The word *icon* refers to a small picture. *LinkWay* comes with a number of predefined fonts and icons. Using the Font and Icon Editor allows you to change the files that come with *LinkWay*.

Modifying fonts and icons is potentially dangerous. You should be very careful to make backups of any files that you intend to modify. In addition, you should read your *LinkWay* documentation very carefully before you make any changes.

While modifying fonts can be fun and interesting, it is important to realize that much history and many hours have gone into the development of any font. Questions of consistency, style, and readability all must be considered before a font is designed. Unless you have a background in the design of type, it is best not to get involved in designing entire new font files. However, you may want to create an occasional special character for use in your work.

You are more likely to use the Font and Icon Editor to make Icons appropriate to folders you are developing. When you start the Font and Icon Editor, type the name

```
/LLHOME/FONTS/ICONS
```

If you are using LinkWay (rather than LinkWay Live!), you need to type

```
/LINKWAY/ICONS
```

This brings the icon file used by *LinkWay* into the editor. At the bottom of the screen, you see several unused icons, numbered 87 through 96. (Note that number 95 is the invisible icon used to make transparent buttons.) You can change icons 87-94 and 96 without affecting anything in any existing folders. Again, read your documentation carefully before you make any changes in the ICONS file.

When you click on an icon, it appears in the editor box on the top left of the screen. This is where you make changes in the icon. You click your left mouse button to create a pixel (dot) and click your right mouse button to remove a pixel. Both the menus and the Help menus give you instructions on editing your icon.

If you are sure that you have a backup of the original ICONS file, then save your work. Return to your *LinkWay* folder and create a new button.

When you get to the Icon window, you see that you can select your new icon for your button.

LinkWay Capture

The *LinkWay* Capture program can be used to "take a picture of" the screen from any program. These pictures can then be used in your *LinkWay* folders.

To start the program, select **Tools** from the **Object** menu and select **LWCAPTUR**. You see

LWCapture Screen Grabber

Load	LW Capture into memory
Remove	LWCapure from memory

Select **Load**. A message appears at the top of the screen telling you that the Capture program is installed in memory. (Note that you can use the **LWCAPTUR** program to remove the Capture program from memory at any time.)

You can capture screens from nearly any software. (Your documentation give details on conflicts that may occur.) Locate the screen you wish to capture and press **Shift + PrtSc**. A line appears at the top of the screen that says

File? [PIC000]

The name in the square brackets is the default name to be used for the file. You can either use the name assigned by the Capture program or you can enter your own name. Press **Enter** to accept the name in the brackets.

Next, go to your *LinkWay* folder and choose **New** from the **Object** menu. Choose **Picture** and select your picture from the list given.

The pictures are saved in the folder in which you are currently working, so you may need to move to another directory to locate your picture.

You can then work with the picture in your folder.

Your documentation contains much more technical detail about working with pictures. It is particularly important to look at these details if you are working in 256-color mode or if you want to convert other picture files for use in *LinkWay*.

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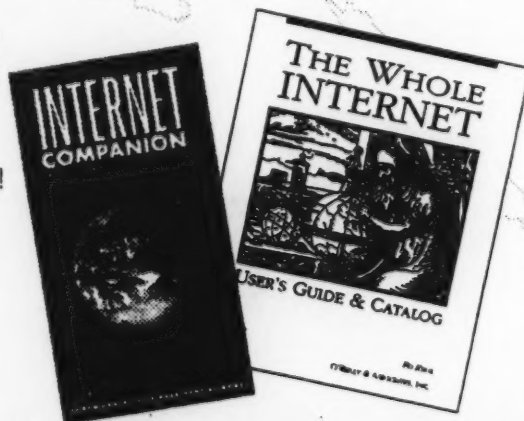
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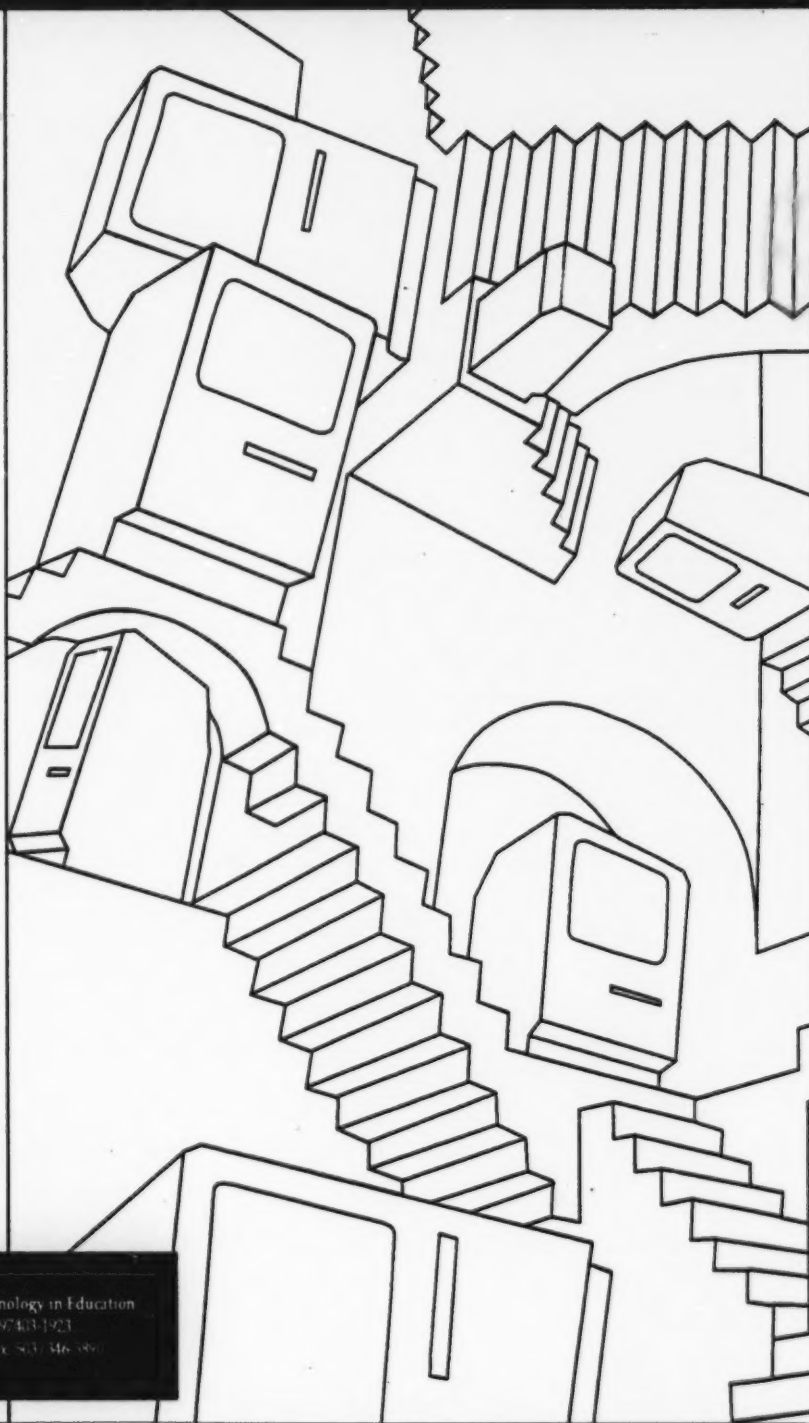
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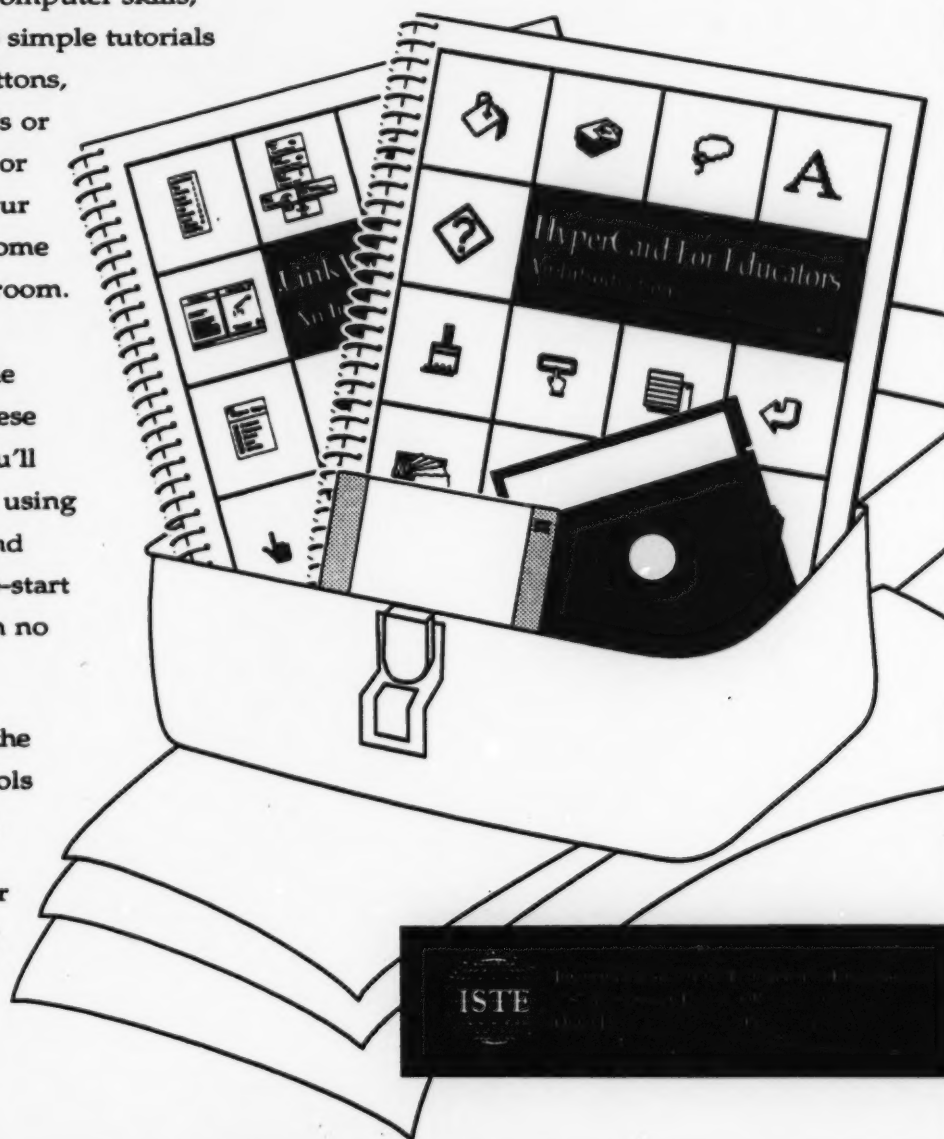
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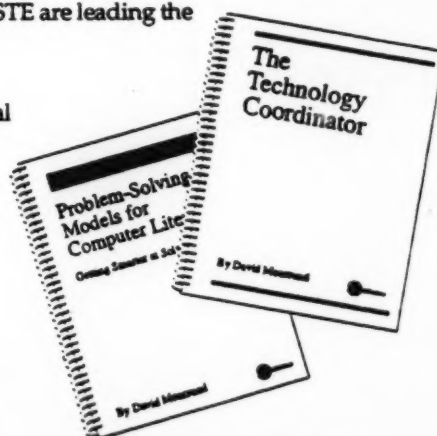
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